United States
Department of
Agriculture

Natural
Resources
Conservation
Service

Washington Basin Outlook Report February 1, 1997

Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

For more water supply and resource management information, contact:

Local Natural Resources Conservation Service Field Office
or
Larry Johnson
Climate Data Liaison
Natural Resources Conservation Service
W. 316 Boone Ave., Suite 450
Spokane, WA 99201-2348
(509) 353-2341

or
Scott Pattee
Acting Water Supply Specialist
Natural Resources Conservation Service
2021 E. College Way, Suite 214
Mt. Vernon, WA 98273-2873
(360) 428-7684

How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Natural Resources Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

Helpfull Hints and Contacts

Helpful Internet addresses

National Water Climate Center (NWCC):
http://www.wcc.nrcs.usda.gov/

Oregon/Washington Snow Surveys:
http://crystal.or.nrcs.usda.gov/snowsurveys/

Washington NRCS Homepage:
http://conservpartners.wsu.edu/nrcs/CoopSnoSrvy.htm

NWCC Anonymous FTP Server:
ftp.wcc.nrcs.usda.gov
URL= ftp://ftp.wcc.nrcs.usda.gov

USGS Real-Time Streamflow Data:
http://wwwdwatcm.wr.usgs.gov/realtime/rt_latest_data.html

COE Hydrology and Hydraulics:
http://www.nps.usace.army.mil/hh/http/docs/hhbranch.htm

National Weather Service, Seattle
http://www.seawfo.noaa.gov/

Northwest Weather and Avalanche Center
http://www.nwac.noaa.gov/

Addresses, Phone Numbers & Email

Scott Pattee
Acting Water Supply Specialist
2021 E. College Way, Suite 214
Mt. Vernon, WA 98273
(360) 428-7684
spattee@wa1.wa.nrcs.usda.gov

Larry Johnson
Climate Data Liaison
W. 316 Boone Ave., Suite 450
Spokane, WA 99201
(509) 353-2341
ljohnson@wa1.wa.nrcs.usda.gov

Stan Fox
Data Collection Office Supervisor
101 SW Main Street, Suite 1300
Portland, OR 97204-3221
(503) 414-3266
sfox@or.nrcs.usda.gov

Chris Pacheco
Resource Conservationist
101 SW Main Street, Suite 1700
Portland, OR 97204-3224
(503) 414-3056
cpacheco@storm.wcc.nrcs.usda.gov

Washington
Water Supply Outlook

February 1997

General Outlook

January brought Washington state a little bit of every kind of weather. The state experienced rain, snow, sunshine, and everything in between. For the most part the state received near normal amounts of rain and snow. Recreationists were able to enjoy several days of intense fun in the sun. River levels stayed high due to up-stream reservoir releases. Mountain snowpack remains much above average in most parts of the state. That's good news for snow enthusiasts, not such good news for flood watchers. Snow surveys have indicated heavy and sometimes wet snowpack conditions. Current high water content of the snow means it will hold less rain in the case of a pineapple express but it also means more water for spring and summer flows. It's been a good news/bad news kind of month.

Snowpack

The February 1 statewide SNOTEL reading showed the snowpack to be 166% of average. Down from an average of 230% last month. Snowpack varied from near to much above average over the state, with the Nooksack River Basin SNOTEL reporting the lowest with 107% of average, and the Yakima River Basin the highest at 179% of average. Westside averages from SNOTEL and February 1 snow surveys included the North Puget Sound river basins with 137% of average, the Olympic Peninsula basins with 116%, and the Lewis-Cowlitz basins with 171% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima with 187%, and the Wenatchee with 159%. Snowpack in the Spokane River Basin was at 164%, and the Pend Oreille River Basin, including Canadian data, had 162% of average. Maximum snow cover in Washington was at Paradise Park SNOTEL on Mt. Rainier, with a water content of 71.2 inches. This site would normally have 38.5 inches of water content on February 1. The highest average in the state was Tinkham Creek SNOTEL near the Cedar River with 278% of average. The lowest snowpack in the state was at the Spirit Lake SNOTEL near Mt. St. Helens with 0 inches of snow-water-equivalent. Spirit Lake would normally have 6.4 inches on February 1.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	228	164
Colville	171	136
Pend Oreille	174	162
Okanogan	135	152
Methow	136	174
Wenatchee	176	159
Chelan	136	155
Yakima	202	187
Walla Walla	191	177
Cowlitz	182	174
Lewis	240	171
White	190	190
Green	242	163
Central Puget Sound	250	176
North Puget Sound	331	137
Olympic Peninsula	327	116

Precipitation

The National Weather Service and Natural Resources Conservation Service climate stations during the month of January showed near to slightly above average precipitation for most of the state. The highest percent of average in the state was at White Pass E.S. SNOTEL site near White Pass, Washington. White Pass E.S. reported 189% of average for a total of 21.1 inches. Average for this site is 11.2 inches for January. Averages for the water year varied from 125% of average in the Okanogan - Methow river basins to 173% of average in the Walla Walla river basins. The highest average for the water year is 228% of average at Yakima WSO Airport, down slightly from 287% of average last month.

BASIN	JANUARY PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	93	148
Colville-Pend Oreille	92	141
Okanogan-Methow	92	125
Wenatchee-Chelan	111	128
Yakima	114	155
Walla Walla	118	173
Cowlitz-Lewis	108	147
White-Green	121	146
Central Puget Sound	120	141
North Puget Sound	144	139
Olympic Peninsula	129	127

Reservoir

Reservoir storage in Washington varied greatly due to fluctuating runoff and flood control management. Reservoir storage in the Yakima Basin was 561,900 acre feet, 88% of average. Storage at other reservoirs included Roosevelt at 87% of average, and the Okanogan reservoirs with 126% of average for February 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 116,500 acre feet, or 91% of average; Chelan Lake, 288,300 acre feet, 64% of average and 43% of capacity; and Ross Lake at 98% of average and 72% of capacity. Greater than average releases continued from most reservoirs across the state. These numbers may change dramatically over the next few months in preparation for spring runoff and flood control.

BASIN	PERCENT OF CAPACITY	PERCENT OF AVERAGE
Spokane	49	91
Colville-Pend Oreille	65	88
Okanogan-Methow	74	126
Wenatchee-Chelan	43	64
Yakima	53	88
North Puget Sound	73	98

For more information contact your local Natural Resources Conservation Service office.

Streamflow

Forecasts for summer streamflow are mostly for well above average. They vary from 114% of average for the Columbia at Birchbank to 167% of average for Mill Creek at Walla Walla. February forecasts for some Western Washington streams include: Cedar River near Cedar Falls, 118%; Green River, 126%; and the Dungeness River, 122%. Some Eastern Washington streams include Yakima River near Parker, 151%; the Wenatchee River at Peshastin, 142%; and the Spokane River near Post Falls, 149%.

January streamflows varied from well above to near average. The South Fork Walla Walla near Milton Freewater was the highest at 286% of average; and the Similkameen at Nighthawk, with 106% of average, was the lowest in the state. Other streamflows were the following percentage of average: the Cowlitz River, 179%; the Skagit River, 152%; the Okanogan River, 193%; the Spokane River, 224%; the Columbia at the Canadian border, 116%, and the Yakima River at Kiona, 173%.

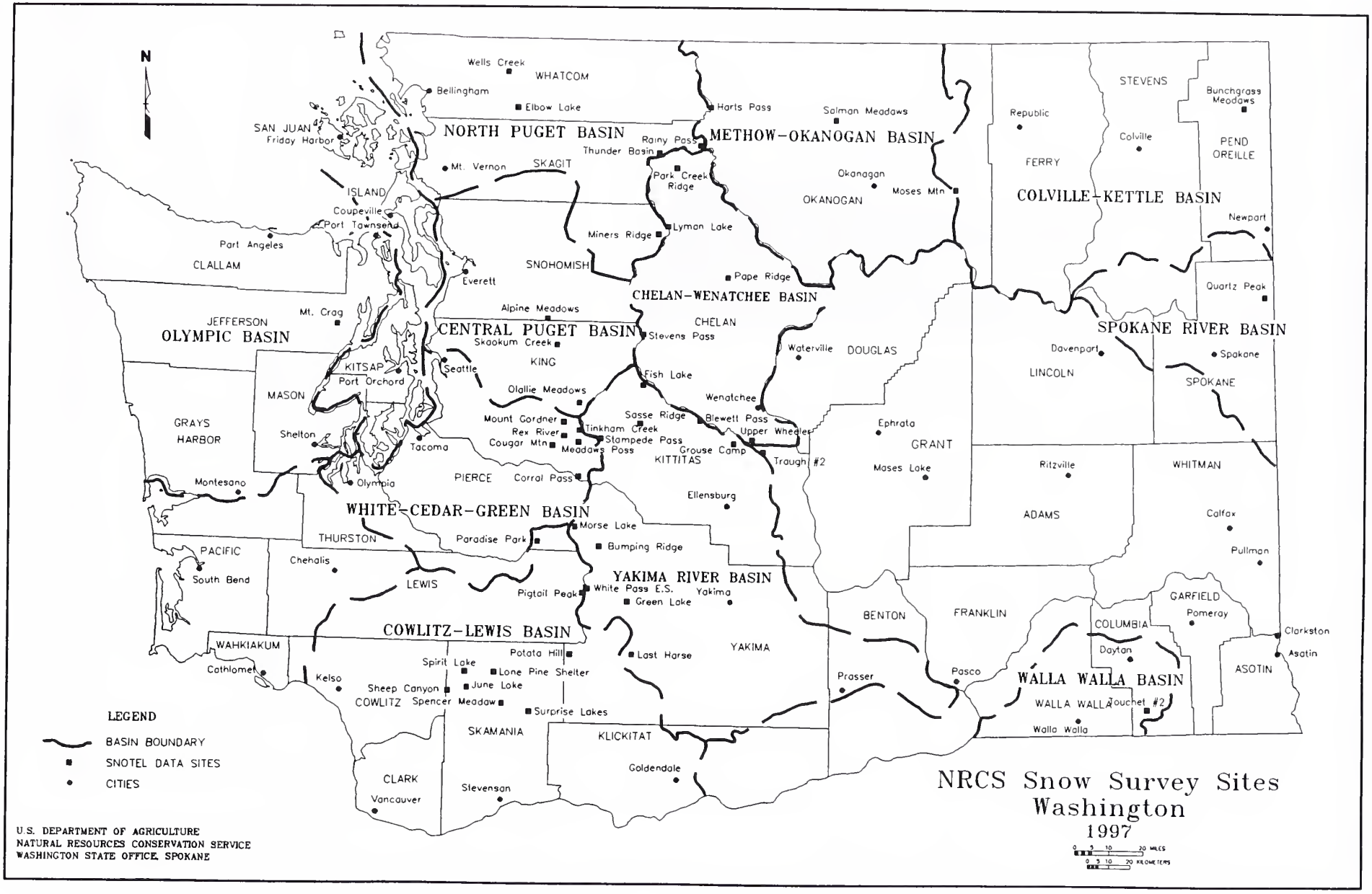
BASIN	PERCENT OF AVERAGE MOST PROBABLE FORECAST (50 PERCENT CHANCE OF EXCEDENCE)
Spokane	146-149
Colville-Pend Oreille	114-156
Okanogan-Methow	136-155
Wenatchee-Chelan	138-155
Yakima	143-159
Walla Walla	129-167
Cowlitz-Lewis	115-151
White-Green	126
Central Puget Sound	118-132
North Puget Sound	124-129
Olympic Peninsula	122-125

For more information contact your local Natural Resources Conservation Service office.

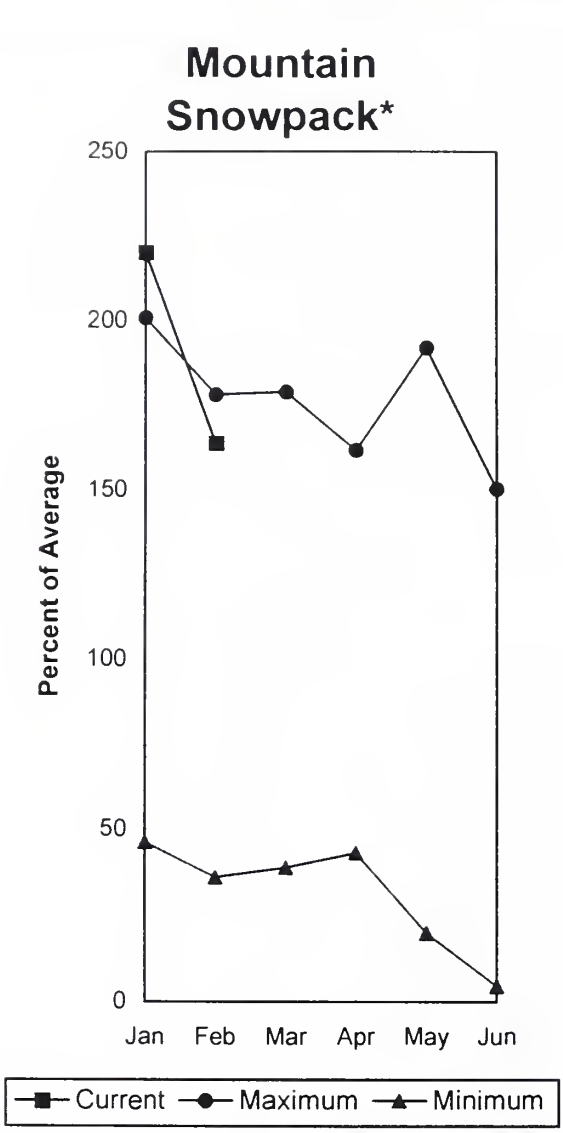
BASIN SUMMARY OF SNOW COURSE DATA

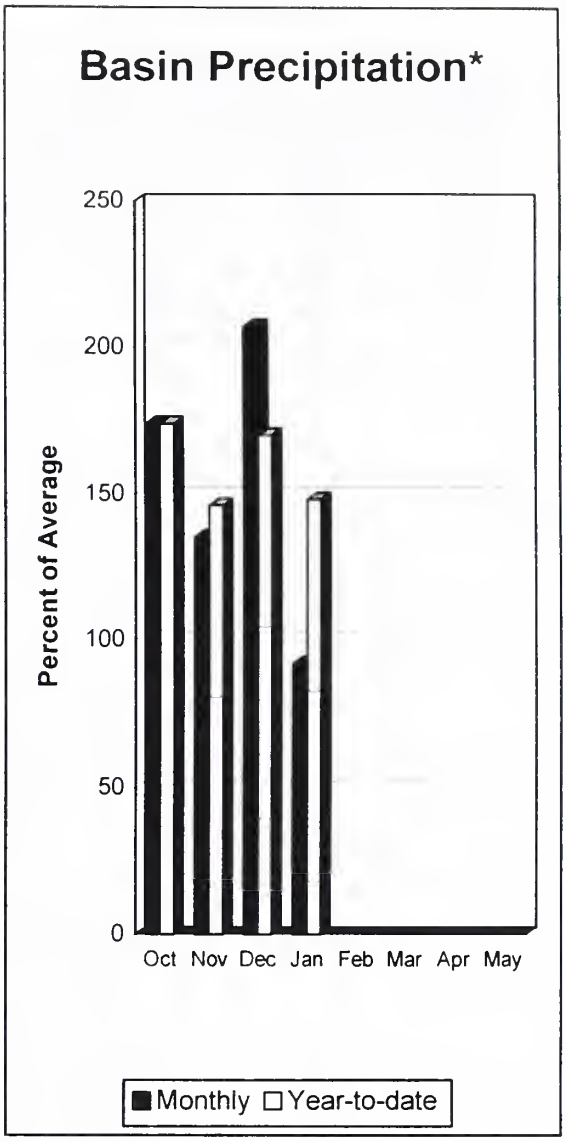
FEBRUARY 1997

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
ABERDEEN LAKE CAN	4000	1/29/97	29	7.5	--	4.7
AHTANUM R.S.	3100	2/01/97	---	9.9E	6.0	5.8
ALPINE MEADOWS PILL	3500	2/01/97	---	43.6S	14.9	16.0
ASHLEY DIVIDE	4820	1/28/97	36	10.5	5.3	5.0
BADGER PASS PILLOW	6900	2/01/97	---	30.2	25.5	22.8
BARKER LAKES PILLOW	8250	2/01/97	---	13.6	10.3	9.4
BASIN CREEK PILLOW	7180	2/01/97	---	7.2	4.6	5.0
BASSOO PEAK	5150	2/03/97	47	14.0	6.4	--
BEAVER CREEK TRAIL	2200	2/01/97	64	24.7	5.8	9.7
BEAVER PASS	3680	1/30/97	84	34.9	7.7	19.7
BERNE-MILL CREEK (d)	3170	1/30/97	102	35.7	15.3	19.9
BIG WHITE MTN CAN.	5100	1/31/97	57	18.0	15.2	12.5
BLACK PINE PILLOW	7100	2/01/97	---	12.8	11.0	8.0
BLEWETT PASS #2	4270	1/29/97	54	19.6	7.7	11.6
BLEWETT PASS#2PILLOW	4270	2/01/97	---	17.9S	8.0	13.6
BRENDA MINE CAN.	4450	2/01/97	---	14.5	--	8.9
BRIEF	1600	1/31/97	40	11.8	6.4	6.0
BROWN TOP AM	6000	1/29/97	158	57.3	36.4	41.2
BUMPING LAKE (NEW)	3400	1/28/97	78	26.8	11.8	14.2
BUMPING RIDGE PILLOW	4600	2/01/97	---	35.1S	14.3	13.9
CAYUSE PASS	5300	2/01/97	---	95.2E	51.8	52.9
CHESSMAN RESERVOIR	6200	1/28/97	15	3.4	.8	2.7
CHICKEN CREEK	4060	1/31/97	65	21.0	13.4	10.9
CHIWAUKUM G.S.	2500	1/30/97	49	14.2	7.4	8.7
CLOUDY PASS AM	6500	2/01/97	---	49.3E	30.9	27.1
COLOCKUM PASS	5370	1/27/97	52	17.7	9.0	11.5
COMBINATION PILLOW	5600	2/01/97	---	6.0	3.3	3.8
COPPER BOTTOM PILLOW	5200	2/01/97	---	14.3	10.1	7.4
COPPER MOUNTAIN	7700	1/29/97	45	13.5	7.9	7.0
CORRAL PASS PILLOW	6000	2/01/97	---	39.9S	21.2	21.3
COUGAR MTN. PILLOW	3200	2/01/97	---	25.3S	10.9	15.0
COX VALLEY	4500	1/27/97	83	31.2	10.7	24.9
COYOTE HILL	4200	1/31/97	42	14.0	8.0	7.5
DALY CREEK PILLOW	5780	2/01/97	---	14.7	8.1	7.8
DEER PARK	5200	1/29/97	36	13.5	4.4	13.5
DEVILS PARK	5900	1/29/97	112	39.4	30.0	30.3
DISCOVERY BASIN	7050	1/28/97	45	12.4	9.0	6.8
DIX HILL	6400	2/02/97	42	12.6	7.5	8.2
DOMMERIE FLATS	2200	1/30/97	35	13.8	6.0	7.0
EAST RAGGED SADDLE	3740	2/01/97	68	25.6	6.7	15.0
ELBOW LAKE PILLOW	3200	2/01/97	---	36.9S	10.1	32.1
EMERY CREEK PILLOW	4350	2/01/97	---	17.6	7.7	10.9
ENDERBY CAN.	5800	1/31/97	102	35.4	32.3	25.2
FISH LAKE	3370	1/28/97	108	37.9	21.6	21.1
FISH LAKE PILLOW	3370	2/01/97	---	38.6S	27.1	22.0
FLATTOP MTN PILLOW	6300	2/01/97	---	46.4	40.1	32.3
FOURTH OF JULY SUM	3200	1/28/97	45	15.2	4.0	7.2
FREEZEOUT CK. TRAIL	3500	1/30/97	46	16.1	3.1	8.8
FROHNER MDWS PILLOW	6480	2/01/97	---	7.3	5.0	5.6
GOAT CREEK	3600	1/28/97	32	7.9	4.7	5.2
GRASS MOUNTAIN #2	2900	1/31/97	29	12.1	7.3	10.3
GRAVE CREEK	4300	1/29/97	61	18.3	--	11.6
GRAVE CRK PILLOW	4300	2/01/97	---	17.4	11.3	11.9
GRAYSTOKE LAKE CAN.	5500	1/28/97	44	12.5	--	--
GREEN LAKE	6000	2/01/97	---	39.0E	22.4	22.6
GREEN LAKE PILLOW	6000	2/01/97	---	30.7S	14.0	14.1
GREYBACK RES CAN.	4700	1/30/97	35	9.6	8.5	6.1
GROUSE CAMP PILLOW	5380	2/01/97	---	21.3S	11.7	13.8
HAMILTON HILL CAN.	4550	1/26/97	48	13.6	14.3	10.1
HAND CREEK PILLOW	5030	2/01/97	---	14.8	8.2	8.3
HARTS PASS PILLOW	6500	2/01/97	---	42.3S	35.8	27.7
HELL ROARING DIVIDE	5770	1/31/97	89	28.0	23.9	20.5
HERRIG JUNCTION	4850	1/31/97	84	27.8	23.0	16.7
HIGH RIDGE PILLOW	4980	2/01/97	---	28.4S	14.9	16.0
HOLBROOK	4530	1/27/97	48	14.3	7.5	7.2
HOODOO BASIN PILLOW	6050	2/01/97	---	50.2	29.7	31.0
HOODOO CREEK	5900	1/29/97	129	43.6	29.2	30.3
HUMBOLDT GLCH PILLOW	4250	2/01/97	---	15.9	6.2	9.7
HURRICANE	4500	1/31/97	44	14.8	3.0	13.7
INTERGAARD	6450	1/28/97	34	9.9	4.6	5.2
ISINTOK LAKE CAN.	5100	1/31/97	25	5.9	6.3	5.2
JUNE LAKE PILLOW	3200	2/01/97	---	40.9S	16.8	28.1
KLESILKWA CAN.	3450	2/01/97	52	17.9	2.4	8.8
KRAFT CREEK PILLOW	4750	2/01/97	---	20.2	9.7	11.4
LESTER CREEK	3100	1/31/97	64	24.6	9.0	14.8
LOLO PASS PILLOW	5240	2/01/97	---	35.1	22.6	21.1
LONE PINE PILLOW	3800	2/01/97	---	40.3S	14.7	20.8
LOOKOUT PILLOW	5140	2/01/97	---	36.2	17.4	22.3
LOST HORSE MTN CAN.	5850	2/03/97	32	8.5	8.3	6.3
LOST HORSE PILLOW	5000	2/01/97	---	23.9S	11.1	22.4
LOST LAKE PILLOW	6110	2/01/97	---	68.0	36.2	41.2
LUBRECHT FOREST NO 3	5450	1/31/97	32	9.0	4.5	5.0
LUBRECHT FOREST NO 4	4650	1/31/97	22	6.7	2.4	2.7
LUBRECHT FOREST NO 6	4040	1/31/97	26	7.4	3.0	3.2
LUBRECHT HYDROPLOT	4200	1/31/97	32	8.8	5.1	5.4
LUBRECHT PILLOW	4680	2/01/97	---	8.1	4.1	4.5
LYMAN LAKE PILLOW	5900	2/01/97	---	53.4S	43.4	39.0
LYNN LAKE	4000	1/31/97	45	19.5	9.7	14.8
MARIAS PASS	5250	1/31/97	65	23.4	10.0	11.2
MCCULLOCH CAN.	3900	1/30/97	29	6.9	5.4	4.7
MEADOWS CABIN	1900	1/31/97	38	14.6	2.1	5.4
MEADOWS PASS PILLOW	3240	2/01/97	---	30.3S	11.7	16.2
MERRITT	2140	1/30/97	63	20.2	9.3	12.4
MICA CREEK PILLOW	4750	2/01/97	---	35.3	13.0	--
MISSEZULA MTN CAN.	4700	2/01/97	33	9.5	7.6	6.5
MISSION RIDGE	5000	1/31/97	55	17.6	--	11.5
MOOSE CREEK PILLOW	6200	2/01/97	---	22.1	16.7	11.6
MORSE LAKE PILLOW	5400	2/01/97	---	62.5S	31.1	29.6
MOSES MTN PILLOW	4800	2/01/97	---	13.7S	14.1	10.0
MOSQUITO RDG PILLOW	5200	2/01/97	---	38.2	19.6	25.2
MOUNT CRAG PILLOW	4050	2/01/97	---	22.1S	10.3	16.9
MT. KOBAU CAN.	5500	1/29/97	42	13.0	8.3	8.5
MT. GARDNER PILLOW	2860	2/01/97	---	21.4S	9.2	9.6
MUTTON CREEK #1	5700	1/28/97	50	16.6	8.7	9.2
N.F. ELK CR PILLOW	6250	2/01/97	---	13.6	9.2	8.1
NEVADA CREEK PILLOW	6480	2/01/97	---	15.2	10.4	8.6
NEW HOZOMEEN LAKE	2800	1/30/97	45	17.0	3.7	8.0
NEZ PERCE CMP PILLOW	5650	2/01/97	---	16.5	12.5	9.8
NOISY BASIN PILLOW	6040	2/01/97	---	46.8	30.4	26.2
OLALLIE MDWS PILLOW	3960	2/01/97	---	61.1S	31.0	34.3
OPHIR PARK	7150	2/02/97	52	15.9	12.6	11.2
OYAMA LAKE CAN.	4100	2/01/97	31	7.2	6.2	5.0
PARADISE PARK PILLOW	5500	2/01/97	---	71.2S	40.2	38.5
PARK CK RIDGE PILLOW	4600	2/01/97	---	53.7S	35.6	29.6
PETERSON MDW PILLOW	7200	1/28/97	---	10.2	6.5	6.5
PIGTAIL PEAK PILLOW	5900	2/01/97	---	64.5S	36.9	30.4
PIKE CREEK PILLOW	5930	2/01/97	---	28.7	19.9	17.1
PIPESTONE PASS	7200	1/28/97	24	6.8	2.2	3.3
POPE RIDGE PILLOW	3540	2/01/97	---	24.5S	17.1	13.9
POSTILL LAKE CAN.	4200	1/30/97	35	9.6	7.3	5.5
POTATO HILL PILLOW	4500	2/01/97	---	27.4S	13.4	16.4
QUARTZ PEAK PILLOW	4700	2/01/97	---	24.8	7.8	14.0
ROUND TOP MTN	4020	2/03/97	50	16.0	--	--
RAGGED RIDGE	3330	1/32/97	37	11.3	--	6.2
RAINY PASS PILLOW	4780	2/01/97	---	43.6S	36.5	24.5
REX RIVER PILLOW	1900	2/01/97	---	27.4S	9.8	17.9
ROCKER PEAK PILLOW	8000	2/01/97	---	13.3	11.1	9.8
RUSTY CREEK	4000	1/28/97	34	8.7	5.2	5.0
SF THUNDER CK AM	2200	2/01/97	---	9.3S	7.0	6.2
SADDLE MTN PILLOW	7900	2/01/97	---	28.6	25.6	17.0
SALMON MDWS PILLOW	4500	2/01/97	---	14.6S	6.5	5.9
SASSE RIDGE PILLOW	4200	2/01/97	---	41.9S	19.2	21.6
SAVAGE PASS PILLOW	6170	2/01/97	---	29.0	21.8	17.4
SAWMILL RIDGE	4700	1/31/97	101	39.9	11.2	23.9
SCHREIBERS MDW AM	3400	2/01/97	---	47.7E	21.0	35.1
SHEEP CANYON PILLOW	4050	2/01/97	---	22.0S	11.6	25.2
SKALKAHO PILLOW	7260	2/01/97	---	28.0	22.7	15.8
SKOOKUM CREEK PILLOW	3920	2/01/97	---	23.0S	8.6	30.6
SPENCER MDW PILLOW	3400	2/01/97	---	37.8S	15.4	20.0
SPIRIT LAKE PILLOW	3100	2/01/97	---	.0S	10.6	6.4
SPOTTED BEAR MTN.	7000	1/27/97	54	15.2	11.8	10.3
STAHL PEAK PILLOW	6030	2/01/97	---	33.9	34.5	23.5
STAMPEDE PASS PILLOW	3860	2/01/97	---	52.3S	22.8	28.8
STEMILT SLIDE	5000	2/01/97	45	15.0	8.0	10.3
STEMPLE PASS	6600	1/30/97	39	10.3	5.8	--
STEVENS PASS PILLOW	4070	2/01/97	---	47.7S	23.4	27.3
STEVENS PASS SAND SO	3700	1/30/97	106	39.3	15.3	23.9
STORM LAKE	7780	1/28/97	45	12.9	9.5	8.7
STRYKER BASIN	6180	1/31/97	98	34.6	29.6	21.6
STUART MOUNTAIN	7400	1/27/97	104	37.1	29.0	21.2
SUMMERLAND RES CAN.	5050	1/30/97	37	9.4	8.3	6.9
SUMMIT G.S.	4600	1/28/97	37	9.6	5.0	5.6
SUNSET PILLOW	5540	2/01/97	---	33.2	17.3	24.8
SURPRISE LKS PILLOW	4250	2/01/97	---	50.4S	23.6	30.4
TEN MILE LOWER	6600	1/29/97	29	7.2	3.3	5.0
TEN MILE MIDDLE	6800	1/29/97	37	9.7	7.6	7.6
THUNDER BASIN	4200	1/31/97	78	29.0	10.6	13.5
TINKHAM CREEK PILLOW	3000	2/01/97	---	35.8S	17.1	12.9
TOGO	3370	2/01/97	---	10.6E	6.2	7.8
TOUCHET #2 PILLOW	5530	2/01/97	---	42.7	18.8	20.8
TRINKUS LAKE	6100	1/27/97	133	49.1	28.0	25.0
TROUGH #2 PILLOW	5310	2/01/97	---	12.2S	6.6	6.4
TROUT CREEK CAN.	5650	1/30/97	31	7.1	7.0	5.4
TRUMAN CREEK	4060	2/02/97	30	8.2	--	3.2
TUNNEL AVENUE	2450	1/29/97	77	26.3	11.6	15.4
TV MOUNTAIN	6800	2/01/97	---	20.4E	14.1	12.0
TWELVEMILE PILLOW	5600	2/01/97	---	20.5	10.4	12.5
TWIN CAMP	4100	1/31/97	76	28.7	12.8	16.9
TWIN LAKES PILLOW	6400	2/01/97	---	45.7	31.5	26.3
TWIN SPIRIT DIVIDE	3480	2/01/97	58	19.4	5.9	10.3
UPPER HOLLAND LAKE	6200	1/27/97	108	34.2	25.6	23.4
UPPER WHEELER PILLOW	4400	2/01/97	---	6.5S	9.4	9.3
WARM SPRINGS PILLOW	7800	2/01/97	---	21.7	21.7	14.1
WEASEL DIVIDE	5450	1/29/97	93	32.0	28.0	21.8
WELLS CREEK PILLOW	4200	2/01/97	---	31.6S	1.1	32.1
WHITE PASS ES PILLOW	4500	2/01/97	---	41.3E	11.9	15.5
WHITE ROCKS MTN CAN.	7200	1/31/97	56	17.8	14.2	15.4


N
Wells Creek
WHATCOM
Bellingham
Elbow Lake
Harts Pass
Salmon Meadows
SAN JUAN
Friday Harbor
NORTH PUGET BASIN
METHOW-OKANOGAN BASIN
Rainy Pass
Thunder Basin
Mt. Vernon
SKAGIT
Park Creek Ridge
Okanogan
Moses Mtn
OKANOGAN
ISLAND
Coupeville
Port Townsend
Lyman Lake
Miners Ridge
Port Angeles
CLALLAM
SNOHOMISH
Everett
Pope Ridge
CHELAN-WENATCHEE BASIN
Alpine Meadows
Mt. Crag
JEFFERSON
OLYMPIC BASIN
CENTRAL PUGET BASIN
CHELAN
Stevens Pass
Skookum Creek
Waterville
DOUGLAS
KITSAP
Port Orchard
Seattle
KING
Fish Lake
Olallie Meadows
Wenatchee
MASON
Mount Gardner
Sasse Ridge
Blewett Pass
GRAYS HARBOR
Shelton
Rex River
Tinkham Creek
Upper Wheeler
Cougar Mtn
Stampede Pass
Meadows Pass
Grouse Camp
Tacoma
KITTITAS
Traugh #2
Montesano
Olympia
PIERCE
Corral Pass
Ellensburg
WHITE-CEDAR-GREEN BASIN
Morse Lake
THURSTON
Paradise Park
Bumping Ridge
PACIFIC
Chehalis
South Bend
YAKIMA RIVER BASIN
LEWIS
Pigtail Peak
White Pass E.S.
Yakima
Green Lake
COWLITZ-LEWIS BASIN
WAHKIAKUM
Potato Hill
Last Horse
YAKIMA
Spirit Lake
Lone Pine Shelter
Cathlamet
Kelso
Sheep Canyon
June Lake
COWLITZ
Spencer Meadow
Surprise Lakes
SKAMANIA
KLICKITAT
Goldendale
CLARK
Vancouver
Stevenson
LEGEND
BASIN BOUNDARY
SNOTEL DATA SITES
CITIES
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
WASHINGTON STATE OFFICE, SPOKANE
STEVENS
Republic
Bunchgrass Meadows
Colville
PEND OREILLE
FERRY
COLVILLE-KETTLE BASIN
Newport
Quartz Peak
SPOKANE RIVER BASIN
Davenport
Spokane
LINCOLN
SPOKANE
Ephrata
GRANT
Moses Lake
Ritzville
WHITMAN
ADAMS
Colfax
Pullman
GARFIELD
Pomeray
BENTON
FRANKLIN
COLUMBIA
Clarkston
Asotin
Daytan
Pasco
Prosser
WALLA WALLA BASIN
Touchet #2
WALLA WALLA
Walla Walla
NRCS Snow Survey Sites
Washington
1997
0 5 10 20 MILES
0 5 10 20 KILOMETERS

Spokane River Basin





*Based on selected stations

The February 1 forecasts for summer runoff within the Spokane River Basin are 149% of average near Post Falls and 146% of average at Long Lake. The forecast is based on a basin snowpack that is 164% of average and precipitation that is 148% of average for the water year. Precipitation for January was near normal at 92% of average. Streamflow on the Spokane River at Long lake was 224% of average for January. February 1 storage in Coeur d'Alene Lake was 116,500 acre feet, 91% of average, and 49% of capacity. Temperatures in the basin were near to slightly below average during January.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - February 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SPOKANE near Post Falls (2)	APR-SEP	3401	3793	4060	149	4327	4719	2730
	APR-JUL	3270	3657	3920	149	4183	4570	2633
SPOKANE at Long Lake	APR-JUL	3605	4019	4300	147	4581	4995	2936
	APR-SEP	3881	4309	4600	146	4891	5319	3159

SPOKANE RIVER BASIN
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
COEUR D'ALENE	238.5	116.5	127.5	127.8

SPOKANE RIVER BASIN
Watershed Snowpack Analysis - February 1, 1997

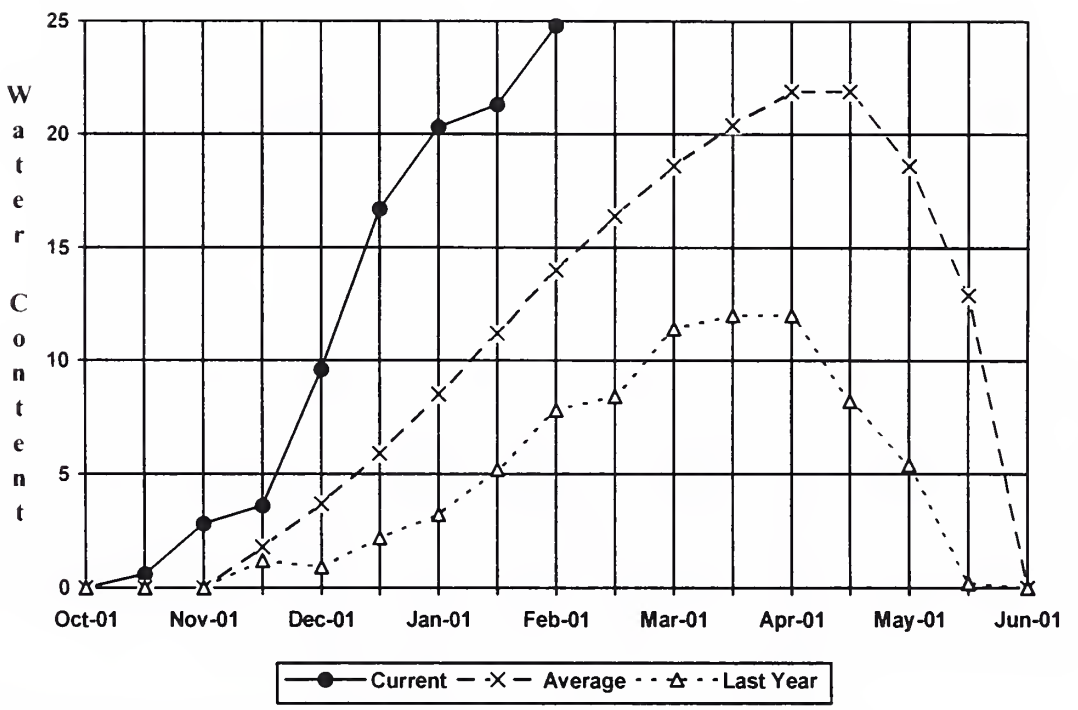
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SPOKANE RIVER	10	228	164
NEWMAN LAKE	1	318	177

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

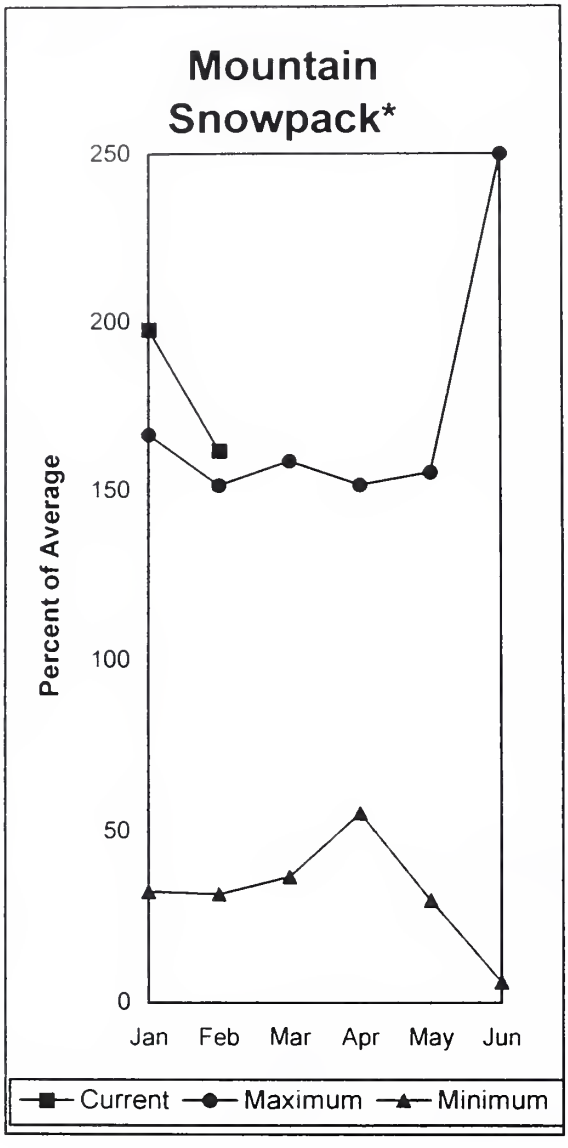
The average is computed for the 1961-1990 base period.

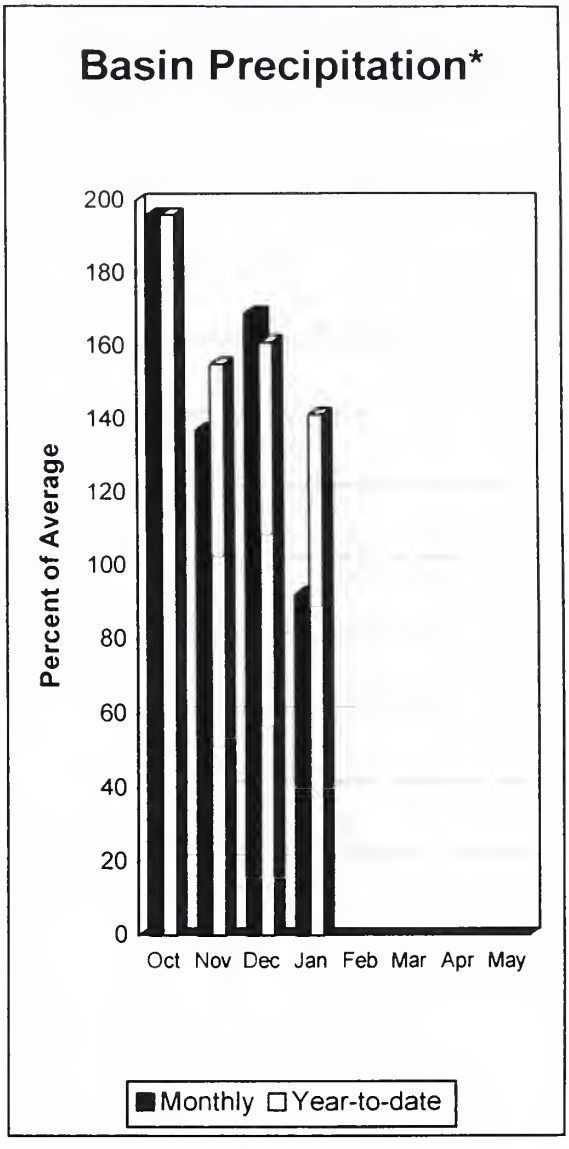
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Quartz Peak SNOTEL
Elevation 4700 ft.



Colville - Pend Oreille River Basins





*Based on selected stations

The forecast for the Kettle River streamflow is for 150% of average; the Pend Oreille, below Box Canyon, 141%; and the Priest River, near the town of Priest River, 143% of average for the summer runoff period. Forecast for the Columbia River at Birchbank is for runoff to be 114% of average. January streamflow was 147% of average on the Pend Oreille River,116% on the Columbia at the International Boundary, and 271% on the Kettle River. February 1 snow cover was 162% of average in the Pend Oreille Basin. Snowpack at Bunchgrass Meadow SNOTEL site contained 32.3 inches of water, compared to the average February 1 reading of 17.6 inches. Precipitation during January was 92% of average, bringing the water year-to-date to 141% of average. Temperatures were near to slightly below normal for January. Reservoir storage in Roosevelt and Banks lakes was reported to be 88% of average and 74% of capacity on January 1.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - February 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 40% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
PEND OREILLE Lake Inflow (1,2)	APR-JUL	14678	17306	18500	141	19694	22322	13150
	APR-SEP	16020	18895	20200	141	21505	24380	14370
	APR-JUN	12342	14873	16000	141	17127	19608	11390
PRIEST nr Priest River (1,2)	APR-JUL	887	1075	1160	143	1245	1433	814
	APR-SEP	948	1149	1240	143	1331	1532	868
PEND OREILLE bl Box Canyon (1,2)	APR-JUL	15425	17815	18900	141	19985	22375	13380
	APR-SEP	16807	19415	20600	141	21785	24393	14590
	APR-JUN	13310	15366	16300	141	17234	19290	11570
CHAMOKANE CREEK near Long Lake	MAY-AUG	7.87	10.63	12.50	147	14.37	17.13	8.52
COLVILLE at Kettle Falls	APR-SEP	163	187	204	156	221	245	131
	APR-JUL	150	173	189	158	205	228	120
	APR-JUN	139	161	176	159	191	213	111
KETTLE near Laurier	APR-SEP	2415	2632	2780	150	2928	3145	1854
	APR-JUL	2308	2505	2640	150	2775	2972	1761
	APR-JUN	2094	2264	2380	150	2496	2666	1585
COLUMBIA at Birchbank (1,2)	APR-JUL	34117	38094	39900	114	41706	45683	35140
	APR-SEP	42556	47537	49800	114	52063	57044	43810
	APR-JUN	25074	27952	29260	114	30568	33446	25670
COLUMBIA at Grand Coulee Dm (1,2)	APR-SEP	68234	76807	80700	124	84593	93166	64850
	APR-JUL	57346	64535	67800	124	71065	78254	54543
	APR-JUN	44856	50457	53000	124	55543	61144	42756

COLVILLE - PEND OREILLE RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROOSEVELT		NO REPORT		
BANKS		NO REPORT		

COLVILLE - PEND OREILLE RIVER BASINS
Watershed Snowpack Analysis - February 1, 1997

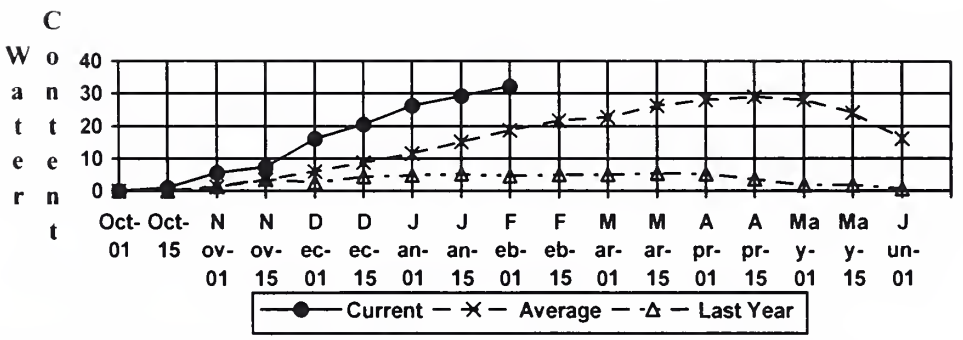
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
COLVILLE RIVER	1	171	136
PEND OREILLE RIVER	65	146	162
KETTLE RIVER	4	136	162

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

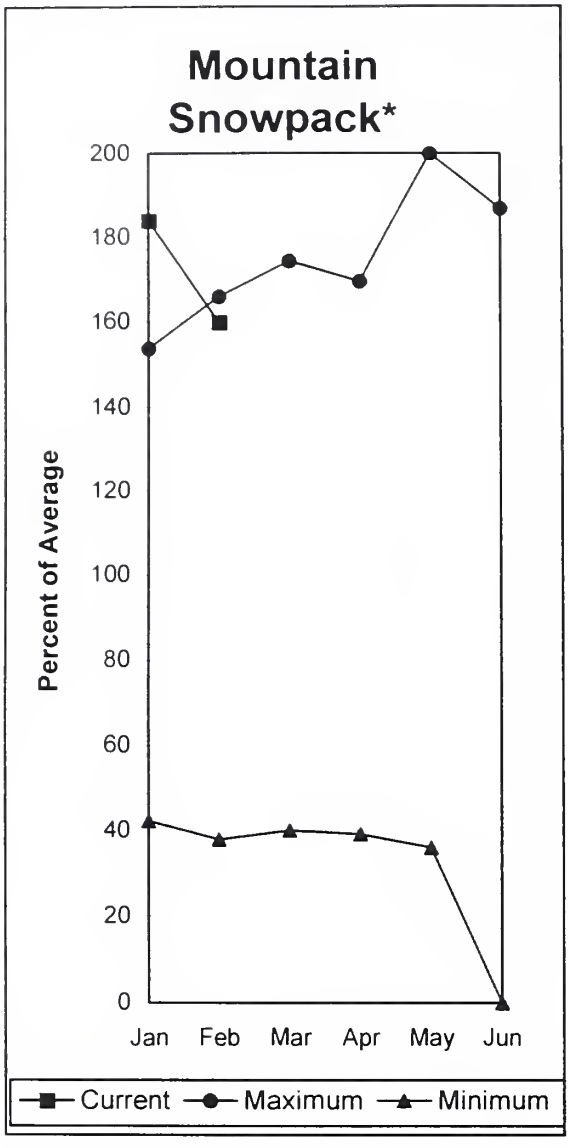
The average is computed for the 1961-1990 base period.

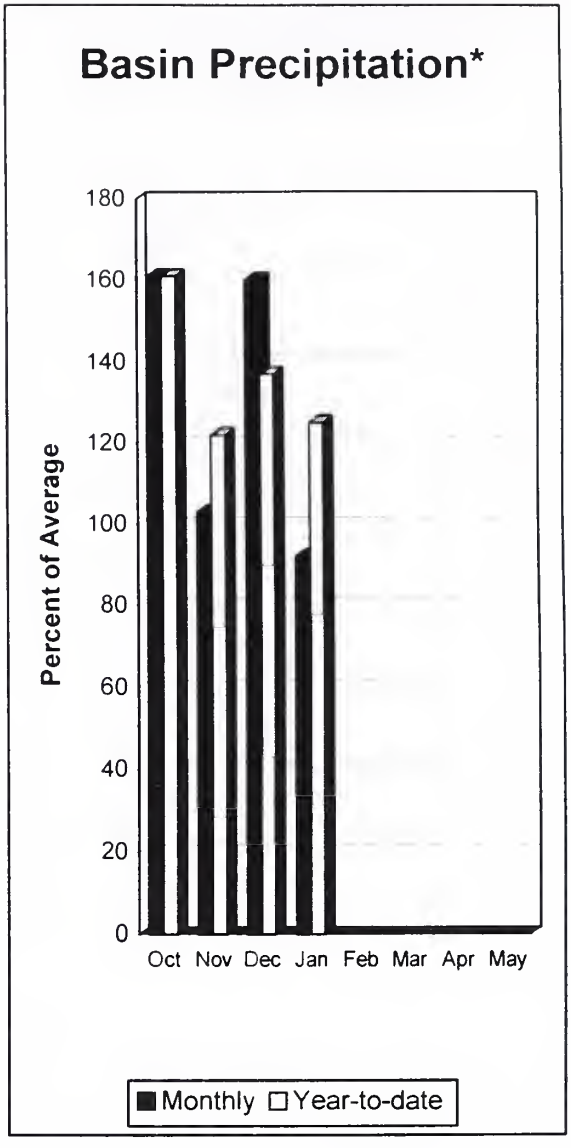
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Bunchgrass Meadow SNOTEL
Elevation 5000 ft.



Okanogan - Methow River Basins





*Based on selected stations

Summer runoff forecast for the Okanogan River is 136% of average; the Similkameen River, 141%, the Methow River, 155%, and Salmon Creek, 154% of average. February 1 snow cover on the Okanogan was 152% of average, and the Methow, 174%. January precipitation in the Okanogan-Methow was 92% of average, with water year-to-date at 125% of average. January streamflow on the Methow River was 215% of average, 193% on the Okanogan River, and 106% on the Similkameen. Snow-water-content at the Harts Pass SNOTEL, elevation 6,500 feet, was 42.3 inches. Average for this site is 27.7 inches. Storage in the Conconully Reservoir was 17,400 acre feet, which is 74% of capacity and 126% of the February 1 average.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - February 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SIMILKAMEEN near Nighthawk (1)	APR-SEP	1650	1870	1970	141	2070	2290	1399
	APR-JUL	1515	1738	1840	141	1942	2165	1304
	APR-JUN	1262	1474	1570	141	1666	1878	1113
OKANOGAN near Tonasket (1)	APR-SEP	1445	1971	2210	136	2449	2975	1623
	APR-JUL	1289	1774	1994	136	2214	2699	1466
	APR-JUN	1094	1495	1677	136	1859	2260	1233
SALMON CREEK near Conconully	APR-JUL	17.1	24	29	154	34	42	19.1
	APR-SEP	18.3	26	31	154	36	43	20
METHOW RIVER near Pateros	APR-SEP	1270	1383	1460	155	1537	1650	942
	APR-JUL	1182	1284	1353	155	1422	1524	873
	APR-JUN	963	1053	1114	149	1175	1265	746

OKANOGAN - METHOW RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
SALMON LAKE	10.5	8.4	8.3	7.5
CONCONULLY RESERVOIR	13.0	9.0	9.4	6.3

OKANOGAN - METHOW RIVER BASINS
Watershed Snowpack Analysis - February 1, 1997

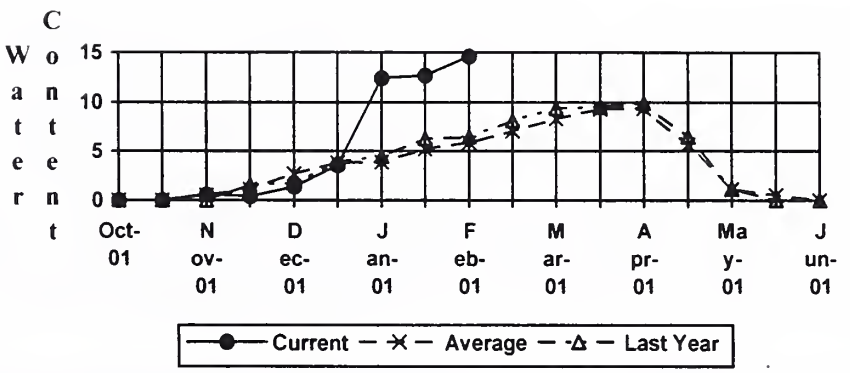
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OKANOGAN RIVER	17	132	149
OMAK CREEK	1	97	137
SANPOIL RIVER	0	0	0
SIMILKAMEEN RIVER	4	119	137
CONCONULLY LAKE	3	195	198
METHOW RIVER	5	136	174

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

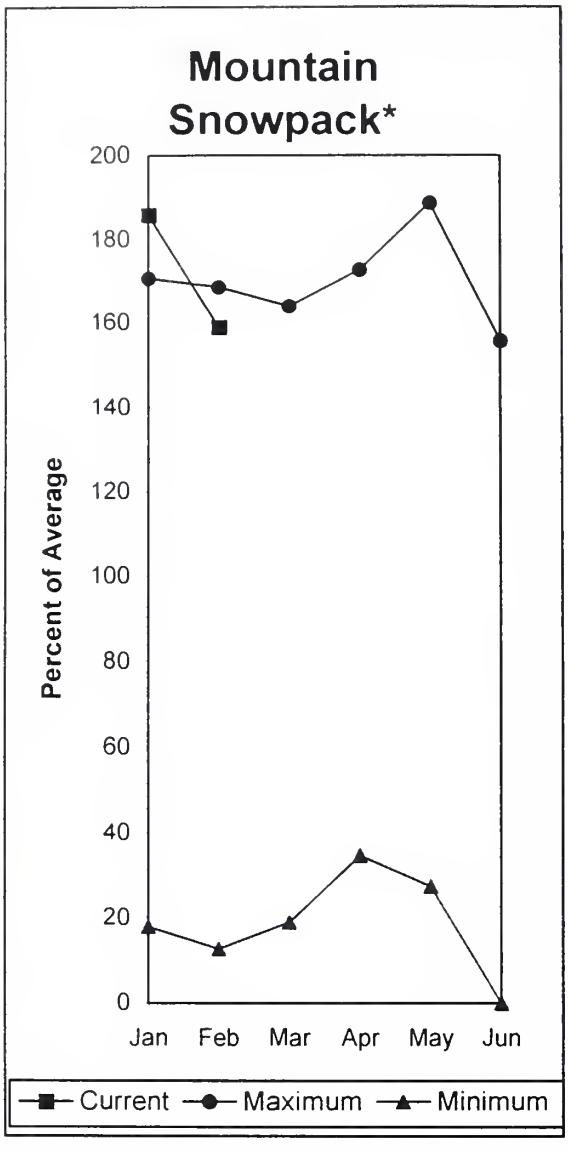
The average is computed for the 1961-1990 base period.

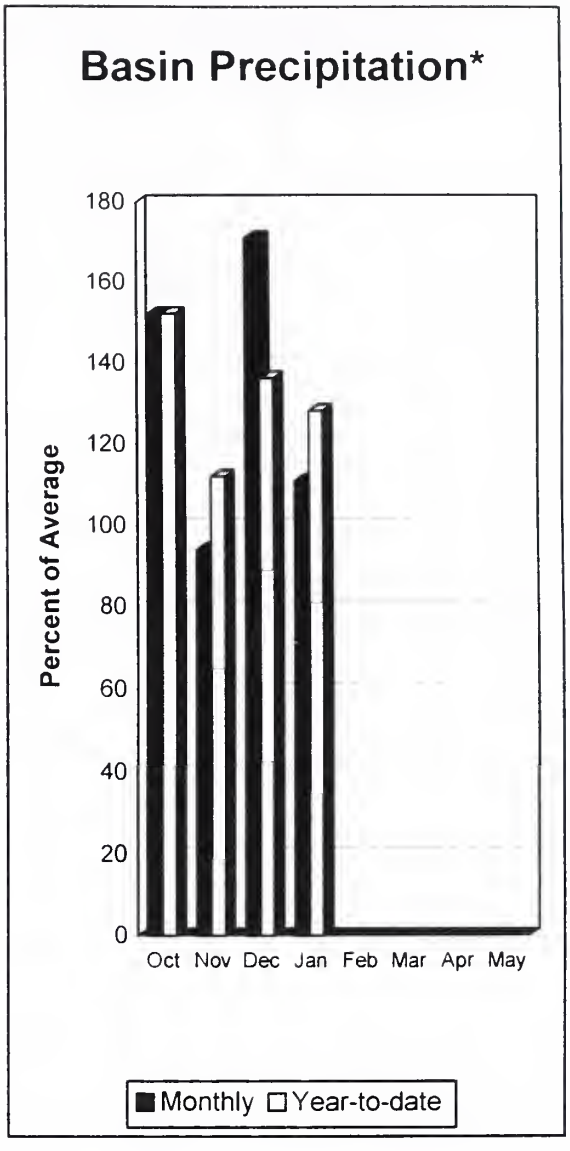
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Salmon Meadows SNOTEL
Elevation 4500 ft.



Wenatchee - Chelan River Basins





*Based on selected stations

Precipitation during January was 111% of average in the basin and 128% for the year to date. Runoff for the Entiat River is forecast to be 155% of average for the summer. The April-September forecast for the Chelan River is for 142%, for the Wenatchee River it is 141%, and 142% on the Stehekin. Icicle and Squilchuck creeks are both expected to be above average this summer. January streamflows on the Chelan and Wenatchee rivers was 109% of average. February 1 snowpack in the Wenatchee Basin was 159% of average, which is 176% of last year. The Chelan Basin was 155% of average along with Trough SNOTEL on Colockum Ridge at 191% and Stemilt Creek at 150% of average. Snowpack in the Entiat River Basin was at 182% of average. Reservoir storage in Lake Chelan was 288,300 acre feet or 64% of February 1 average and 43% of capacity. Lyman Lake SNOTEL had the most snow water with 53.4 inches of water. This site would normally have 39 inches and last year it had 43.4 inches.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - February 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CHELAN RIVER near Chelan	APR-SEP	1473	1579	1650	142	1721	1827	1160
	APR-JUL	1336	1425	1485	145	1545	1634	1024
	APR-JUN	1050	1126	1177	145	1228	1304	812
STEHEKIN near STEHEKIN	APR-SEP	1061	1129	1175	142	1221	1289	827
	APR-JUL	920	973	1010	144	1047	1100	701
	APR-JUN	699	744	775	144	806	851	538
ENTIAT RIVER near Ardenvoir	APR-SEP	309	334	351	155	368	393	227
	APR-JUL	280	303	318	154	333	356	206
	APR-JUN	206	226	239	141	252	272	169
WENATCHEE at Plain	APR-SEP	1492	1598	1670	140	1742	1848	1190
	APR-JUL	1380	1458	1510	141	1562	1640	1072
	APR-JUN	1124	1180	1218	141	1256	1312	864
WENATCHEE R. at Peshastin	APR-SEP	1754	2041	2320	142	2549	2886	1636
	APR-JUL	1599	1903	2110	142	2317	2621	1485
	APR-JUN	1300	1544	1710	142	1876	2120	1204
STEMILT nr Wenatchee (miners in)	MAY-SEP	143	171	190	138	209	237	138

WENATCHEE - CHELAN RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CHELAN LAKE	676.1	288.3	572.2	450.6

WENATCHEE - CHELAN RIVER BASINS
Watershed Snowpack Analysis - February 1, 1997

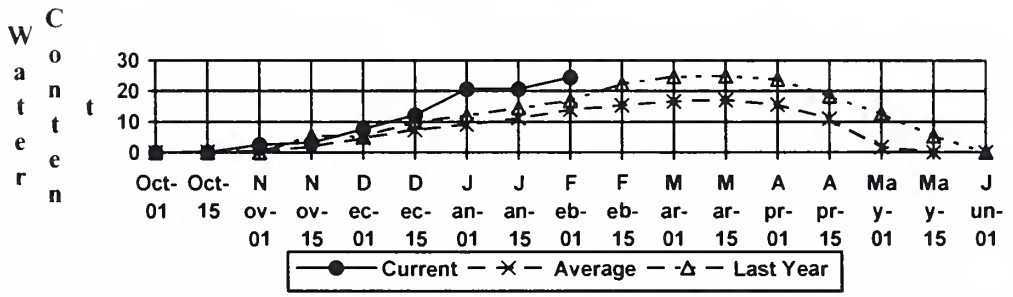
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CHELAN LAKE BASIN	5	136	155
ENTIAT RIVER	2	154	182
WENATCHEE RIVER	12	179	162
STEMILT CREEK	2	155	138
COLOCKUM CREEK	1	185	191

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

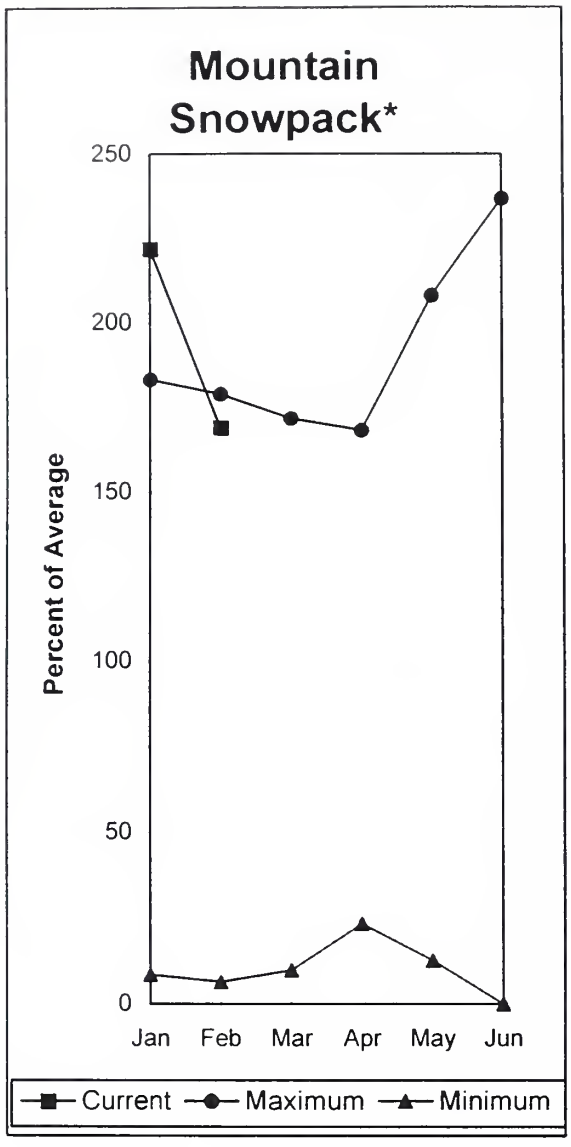
The average is computed for the 1961-1990 base period.

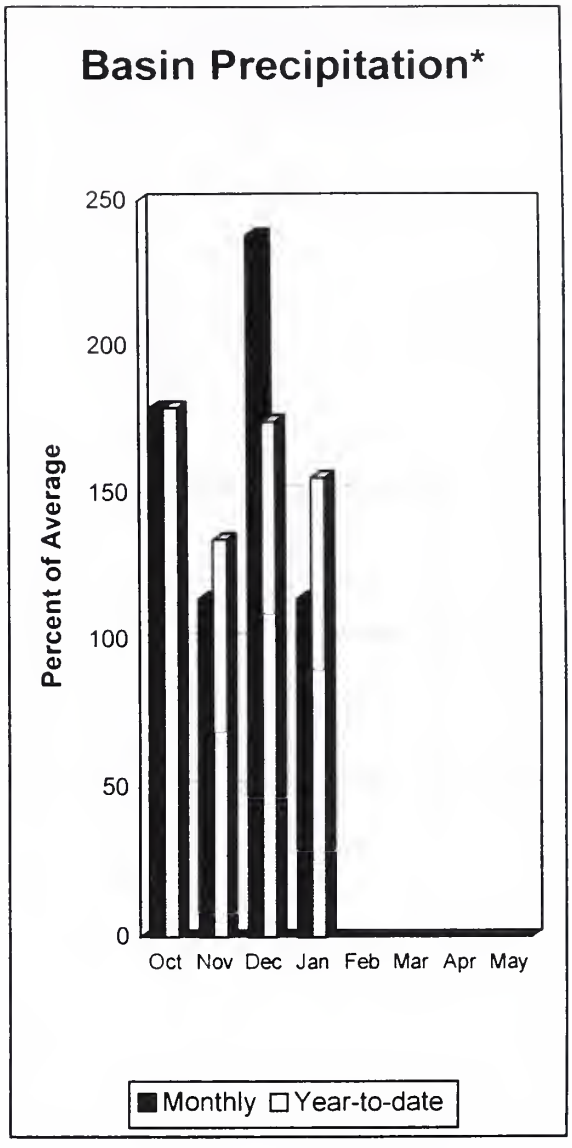
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Pope Ridge SNOTEL
Elevation 3540 ft.



Yakima River Basin





*Based on selected stations

February 1 reservoir storage for the five major reservoirs was 561,900 acre feet, 88% of average. February 1 summer streamflow forecasts are for much above average in the Yakima Basin. Forecasts for the Yakima River at Cle Elum are for 144% of average; Naches River, 148%; the Yakima River near Parker, 151%; Ahtanum Creek, 159%; and the Tieton River, 144%. The Klickitat River near Glenwood is forecast at 151% of average flows this summer. January streamflows within the basin were; the Yakima River near Parker 146% of average; the Yakima near Cle Elum, 117%; and the Naches River at 168%. February 1 snowpack was 187% based upon 20 snow courses and SNOTEL readings within the Yakima Basin. Precipitation was 114% of average for January and 155% for the water year-to-date. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - February 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KEECHELUS LAKE INFLOW	APR-JUL	153	167	177	143	187	201	124
	APR-SEP	167	182	193	143	204	219	135
	APR-JUN	137	148	156	143	164	175	109
KACHESS LAKE INFLOW	APR-JUL	141	153	161	145	169	181	111
	APR-SEP	149	162	171	145	180	193	118
	APR-JUN	128	138	144	146	150	160	99
CLE ELUM LAKE INFLOW	APR-JUL	539	574	597	146	620	655	409
	APR-SEP	585	626	654	146	682	723	448
	APR-JUN	456	484	504	146	524	552	345
YAKIMA at Cle Elum	APR-JUN	932	995	1038	144	1081	1144	721
	APR-JUL	1076	1150	1200	144	1250	1324	832
	APR-SEP	1185	1265	1320	144	1375	1455	915
BUMPING LAKE INFLOW	APR-SEP	181	196	207	152	218	233	136
	APR-JUL	166	180	189	152	198	212	124
	APR-JUN	132	145	154	148	163	176	104
AMERICAN RIVER near Nile	APR-SEP	154	167	175	148	183	196	118
	APR-JUL	145	156	164	151	172	183	109
	APR-JUN	120	131	138	150	145	156	92
RIMROCK LAKE INFLOW	APR-SEP	301	326	343	144	360	385	238
	APR-JUL	255	275	288	144	301	321	200
	APR-JUN	207	222	233	144	244	259	162
NACHES near Naches	APR-SEP	1101	1178	1230	148	1282	1359	832
	APR-JUL	1013	1080	1125	149	1170	1237	755
	APR-JUN	873	931	970	149	1009	1067	651
AHTANUM CREEK nr Tampico (2)	APR-SEP	54	66	73	159	81	92	46
	APR-JUL	50	60	67	160	74	84	42
	APR-JUN	43	52	58	160	64	72	36
YAKIMA near Parker	APR-SEP	2688	2880	3010	151	3140	3332	1994
	APR-JUL	2436	2608	2725	151	2842	3014	1805
	APR-JUN	2165	2311	2410	151	2509	2655	1597
KLICKITAT near Glenwood	APR-JUN	145	158	166	151	174	187	110
	APR-SEP	182	200	212	151	224	242	140

YAKIMA RIVER BASIN
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
KEECHELUS	157.8	107.3	119.9	96.0
KACHESS	239.0	95.8	213.8	170.0
CLE ELUM	436.9	218.3	326.9	251.0
BUMPING LAKE	33.7	8.6	14.3	9.0
RIMROCK	198.0	131.9	141.5	115.0

YAKIMA RIVER BASIN
Watershed Snowpack Analysis - February 1, 1997

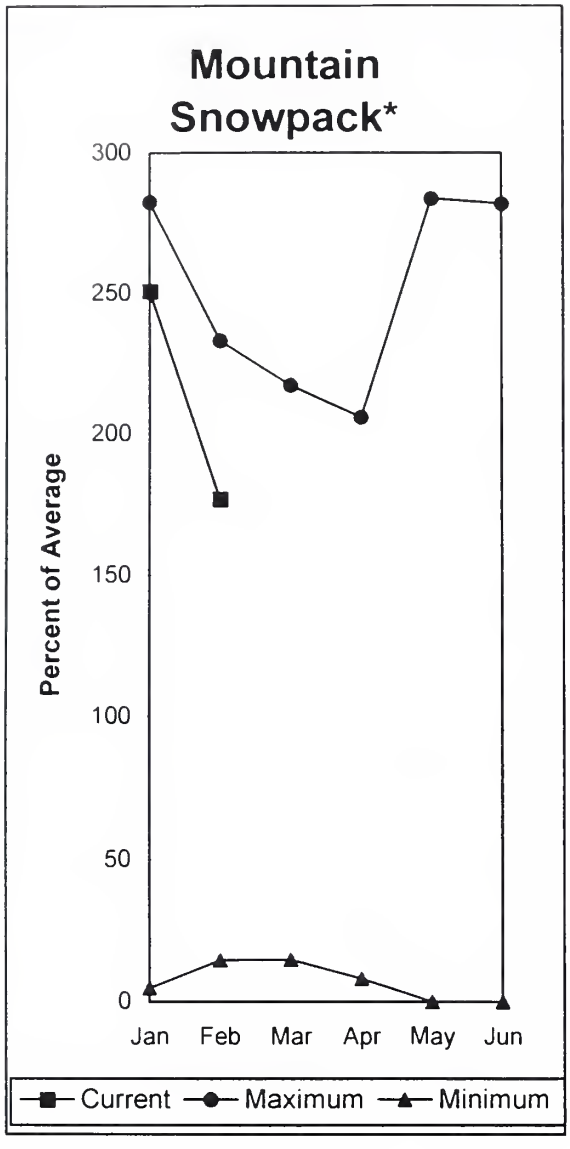
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
YAKIMA RIVER	21	205	186
AHTANUM CREEK	3	207	152

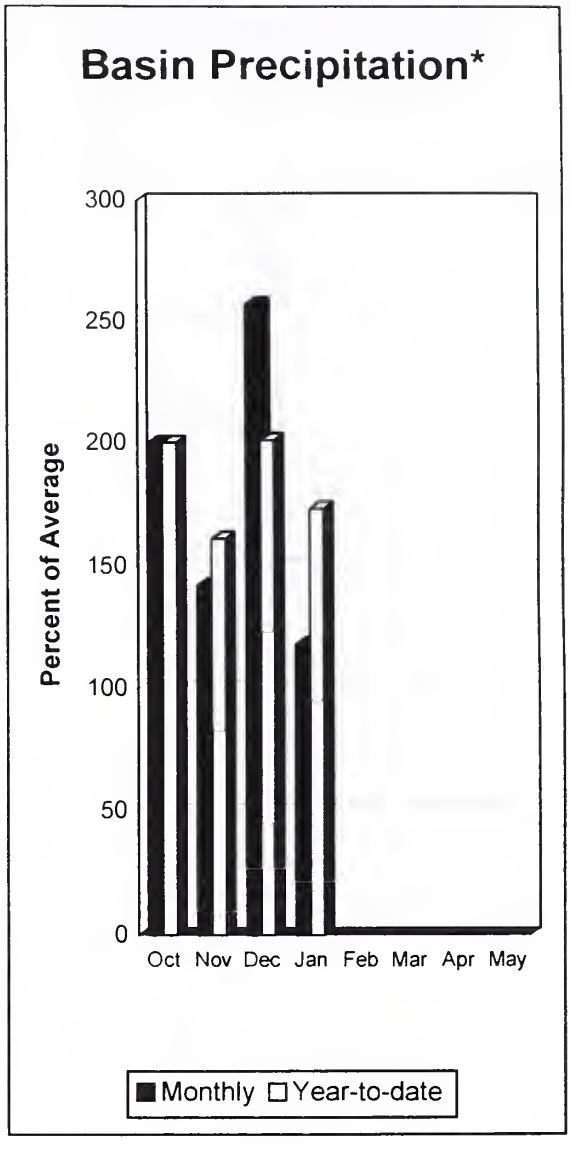
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Walla Walla River Basin





*Based on selected stations

January precipitation was 118% of average, bringing the year-to-date precipitation to 173% of average. February 1 snowpack was at 177% of average, compared to 92% last year. The forecast is for 129% of average streamflow in the Walla Walla River for the coming summer, for the Grande Ronde at Troy, 145%, and 167% for Mill Creek. January streamflow was 286% of average for the Walla Walla River, 240% for the Snake River, and 265% for the Grande Ronde River near Troy. The Touchet SNOTEL site had 42.7 inches of snow-water-equivalent. The average February 1 reading for this site is 20.8 inches. Extensive design and construction is under way or planned for many flood ravaged streams in the south east part of Washington. NRCS, COE and other cooperating agencies are continuing flood recovery efforts.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - February 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
GRANDE RONDE at Troy (1)	MAR-JUL	1562	1952	2130	145	2308	2698	1471
	APR-SEP	1386	1739	1900	145	2061	2414	1312
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	24785	31141	34100	158	37009	43415	21650
	APR-SEP	28031	35230	38500	158	41770	48969	24360
MILL CREEK at Walla Walla	APR-SEP	21	25	29	167	32	37	17.1
	APR-JUL	20	25	28	168	32	37	16.9
	APR-JUN	20	25	28	168	31	36	16.7
SF WALLA WALLA near Milton-Freewater	APR-JUL	59	66	70	132	74	81	53
	APR-SEP	73	80	85	129	90	97	66

WALLA WALLA RIVER BASIN
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

WALLA WALLA RIVER BASIN
Watershed Snowpack Analysis - February 1, 1997

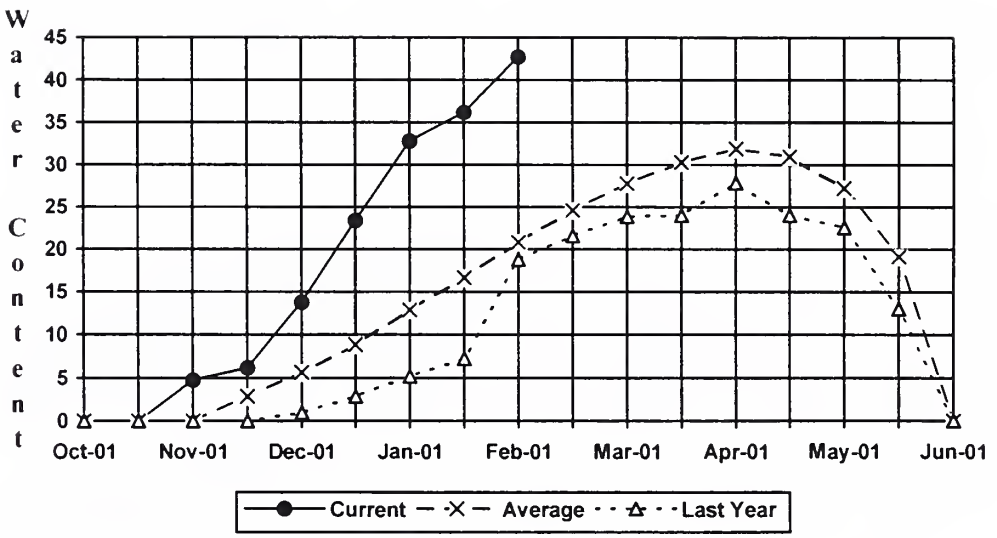
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WALLA WALLA RIVER	1	191	177

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

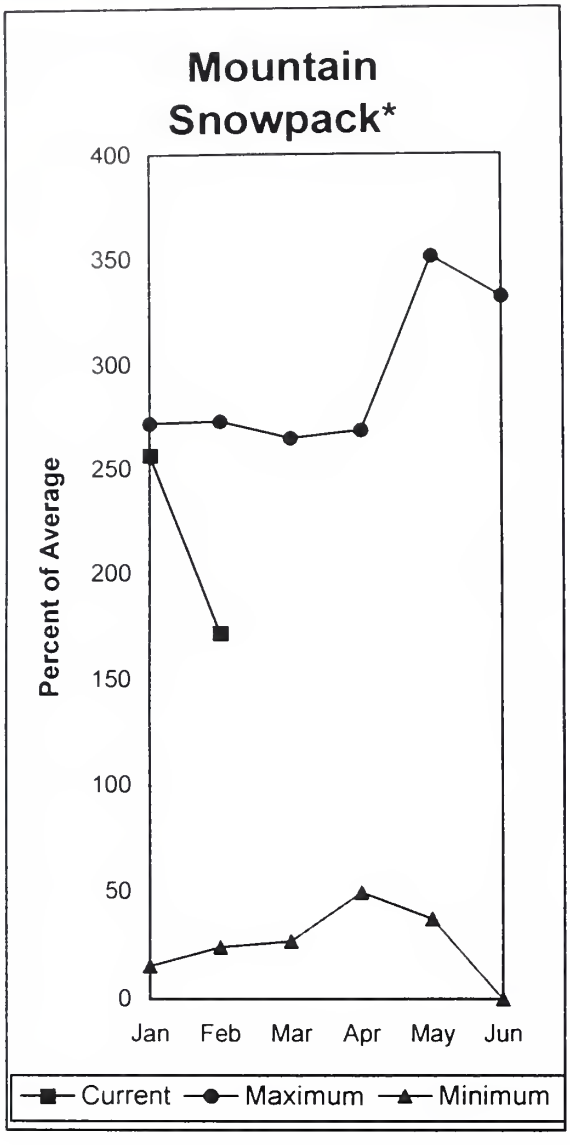
The average is computed for the 1961-1990 base period.

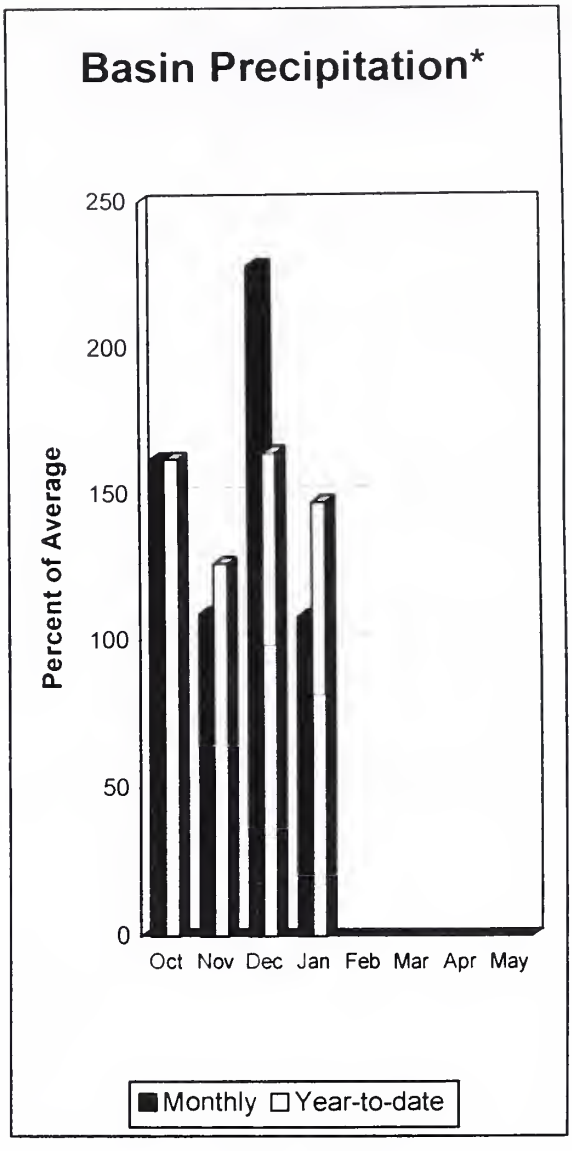
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Touchet #2 SNOTEL
Elevation 5530 ft.



Cowlitz - Lewis River Basins





*Based on selected stations

The forecast for summer runoff in the Lewis River Basin is 124% of average. The Cowlitz River is forecast for 116% of average runoff. January streamflow for the Cowlitz River was 179% of average, and 145% for the Lewis River. January precipitation was 108% of average, 147% of average for the water-year. February 1 snow cover for the Cowlitz River was 174% and the Lewis River was 171% of average. The Paradise Park SNOTEL recorded the most water content for the basin and the state with 71.2 inches of water. Average February 1 water content is38.5 inches.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - February 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
LEWIS at Ariel (2)	APR-SEP	1187	1368	1490	124	1612	1793	1206
	APR-JUL	1044	1218	1337	127	1456	1630	1053
	APR-JUN	911	1075	1187	127	1299	1463	935
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	1482	1675	2310	117	2645	3138	1970
	APR-JUL	1304	1736	2030	117	2324	2756	1731
	APR-JUN	1110	1479	1730	117	1981	2350	1477
COWLITZ R. at Castle Rock (2)	APR-SEP	2180	2704	3060	115	3416	3940	2667
	APR-JUL	1902	2359	2670	115	2981	3438	2325
	APR-JUN	1630	2023	2290	115	2557	2950	1995
KLICKITAT near Glenwood	APR-JUN	145	158	166	151	174	187	110
	APR-SEP	182	200	212	151	224	242	140

COWLITZ - LEWIS RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

COWLITZ - LEWIS RIVER BASINS
Watershed Snowpack Analysis - February 1, 1997

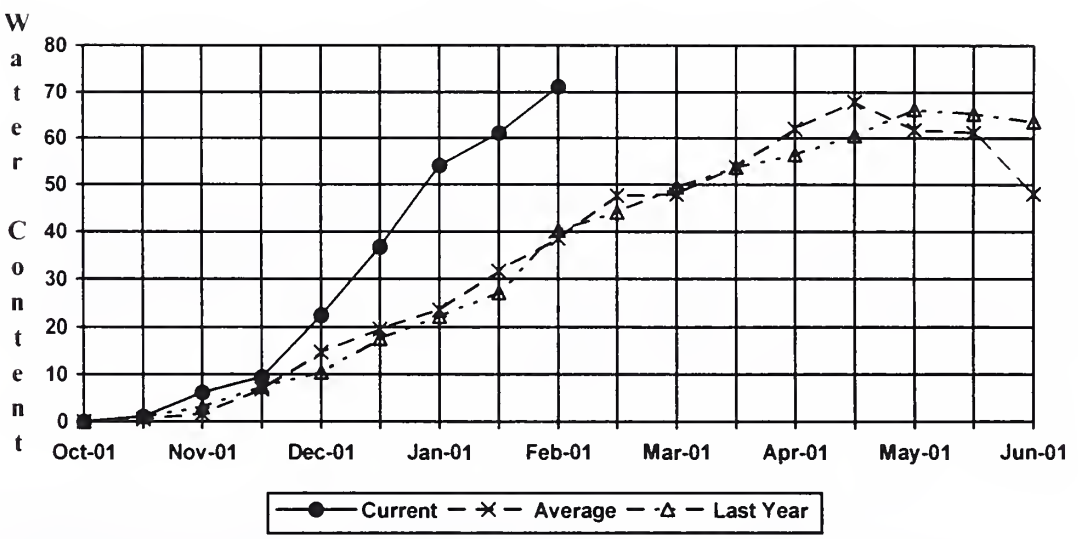
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
LEWIS RIVER	4	240	171
COWLITZ RIVER	7	182	174

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

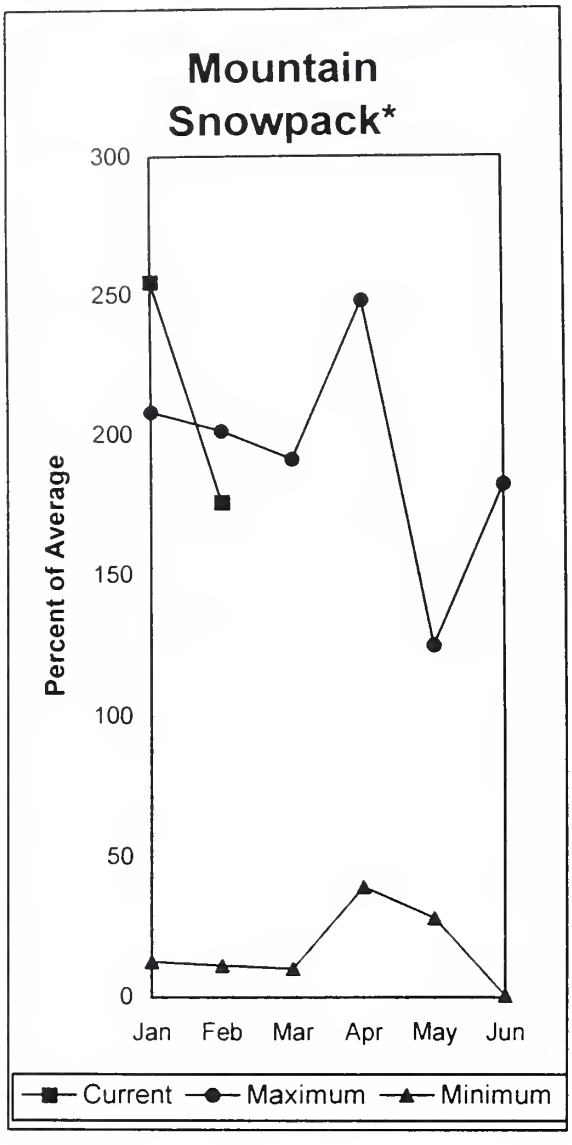
The average is computed for the 1961-1990 base period.

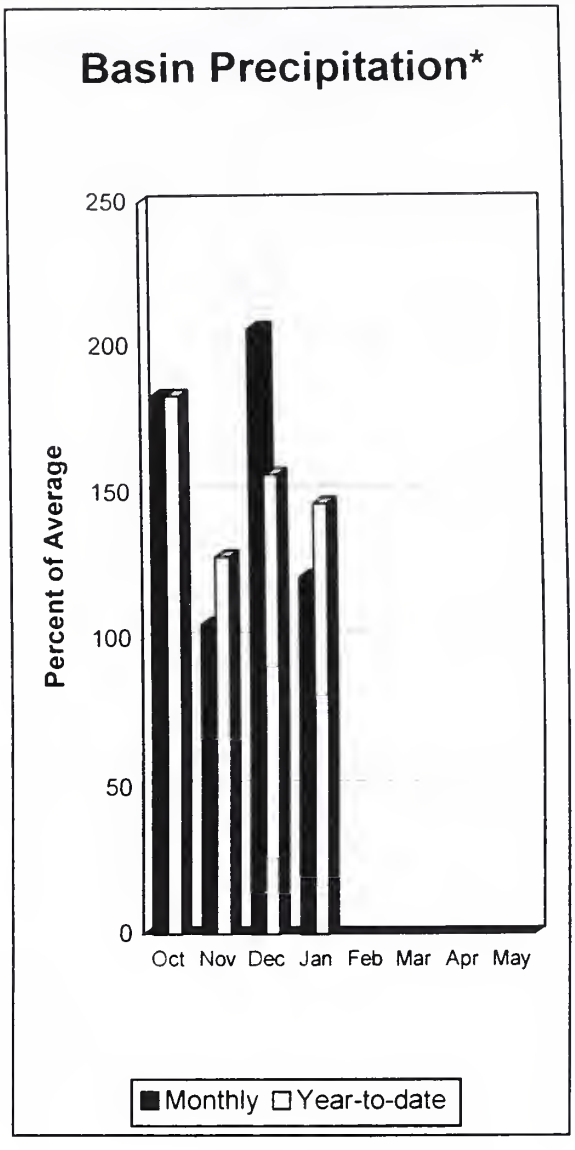
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Paridise SNOTEL
Elevation 5120 ft.



White - Green River Basins





*Based on selected stations

Summer runoff is forecast to be 126% of average for the Green River. February 1 snowpack was 190% of average in the White River Basin and 163% in the Green River Basin. Water content on February 1 at the Morse Lake SNOTEL, at an elevation of 5,400 feet, was 62.5 inches. This site has a February 1 average of 29.6 inches. Cayuse Pass snow course was estimated to have 95.2 inches of water content on February 1 from readings taken January 10. January precipitation was 121% of average, bringing the water year-to-date to 146% of average for the basins.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - February 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ====== Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
GREEN RIVER below Howard Hanson Dam	APR-JUL	270	305	329	128	353	388	257
	APR-SEP	300	336	360	126	384	420	285
	APR-JUN	244	277	300	128	323	356	234

WHITE - GREEN RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

WHITE - GREEN RIVER BASINS
Watershed Snowpack Analysis - February 1, 1997

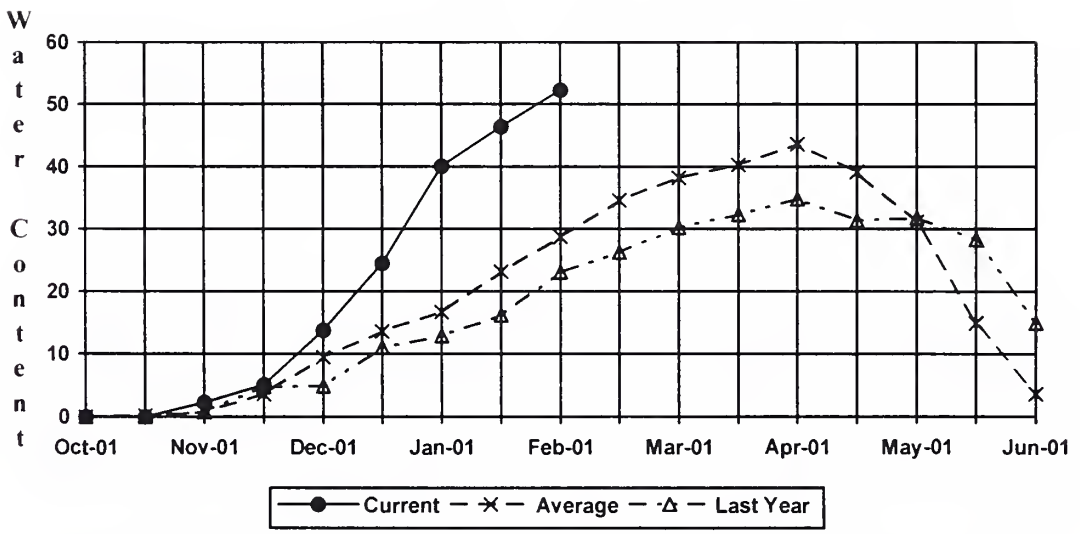
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WHITE RIVER	3	190	190
GREEN RIVER	7	242	163

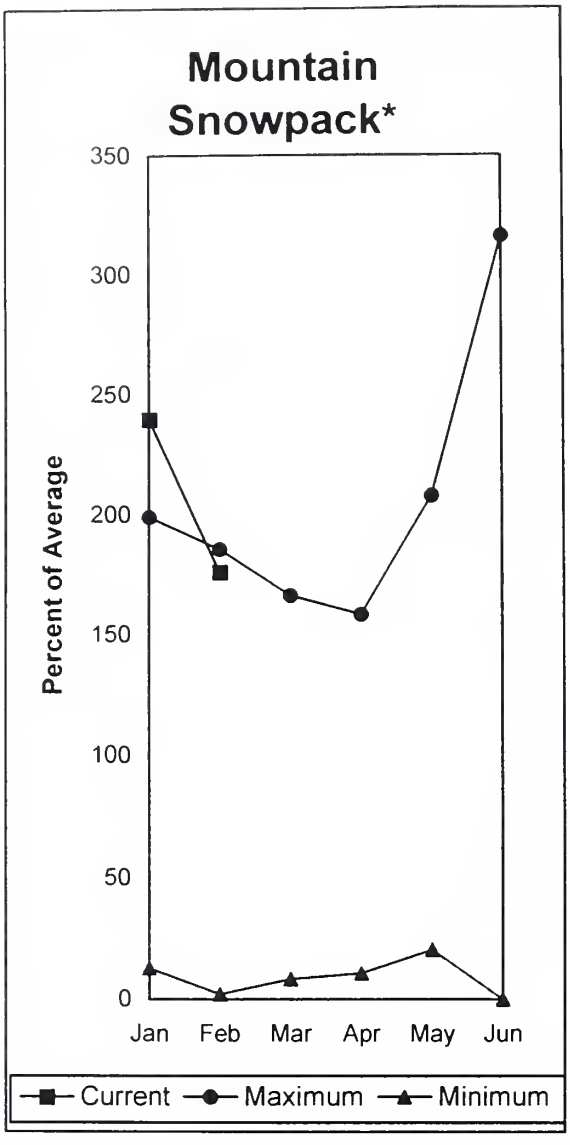
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

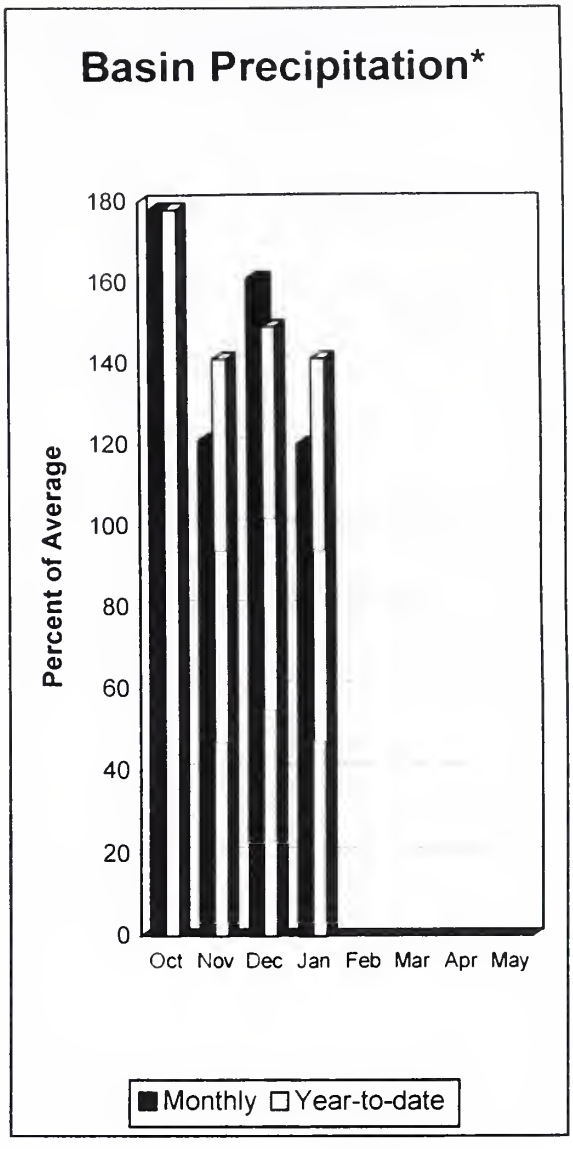
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Stampede Pass SNOTEL
Elevation 3860 ft.







*Based on selected stations

Forecast for spring and summer flows are: 118% for the Cedar River near Cedar Falls, 124% for the Rex River, 121% for the South Fork of the Tolt River and 132% for the Cedar River at Cedar Falls. Basin-wide precipitation for January was 120% of average, bringing water-year-to-date to 141% of average. February 1 snow cover in the Cedar River Basin was 203%, the Tolt River Basin was 143%, the Snoqualmie River Basin was 164%, and the Skykomish River Basin was 194% of average. Stevens Pass SNOTEL, at 4,070 feet, had 47.7 inches of water content. Average February 1 water content is 27.3 inches.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - February 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CEDAR RIVER near Cedar Falls	APR-JUL	73	84	92	119	100	111	77
	APR-SEP	80	92	101	118	109	121	85
	APR-JUN	63	73	79	117	86	96	68
REX RIVER near Cedar Falls	APR-JUL	26	31	34	126	37	42	27
	APR-SEP	30	34	37	124	40	45	30
	APR-JUN	25	29	31	125	34	38	25
CEDAR RIVER at Cedar Falls	APR-JUL	80	98	109	133	121	138	82
	APR-SEP	81	98	109	132	121	138	83
	APR-JUN	77	93	103	129	113	129	80
SOUTH FORK TOLT near Index	APR-JUL	15.4	17.4	18.7	123	20	22	15.2
	APR-SEP	18.0	20	22	121	23	25	17.8
	APR-JUN	12.4	14.3	15.5	118	16.7	18.6	13.1

CENTRAL PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

CENTRAL PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - February 1, 1997

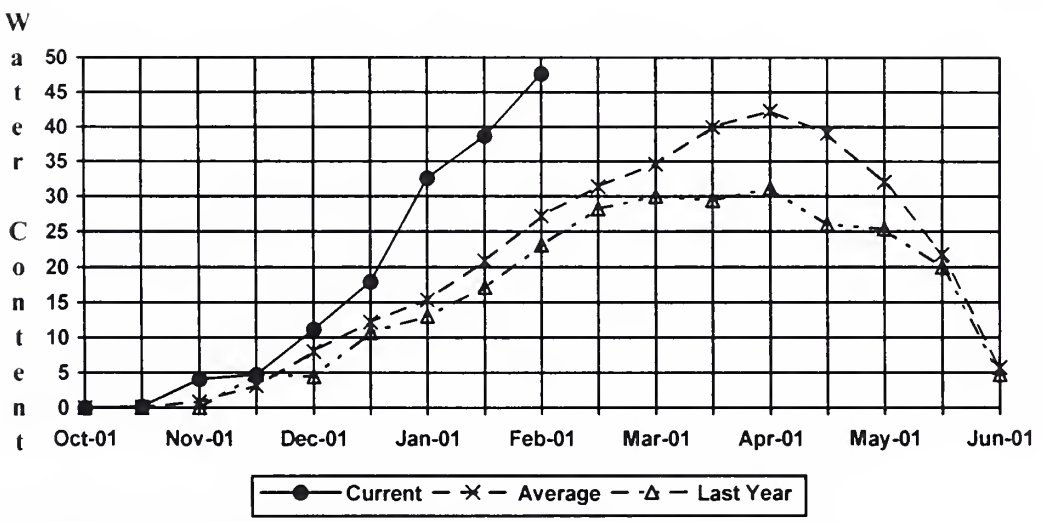
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CEDAR RIVER	4	240	203
TOLT RIVER	2	283	145
SNOQUALMIE RIVER	5	238	167
SKYKOMISH RIVER	3	243	194

* 90%, 70%, 30%, and 10% chances of exceeding are the probaoilities that the actual flow will exceed the volumes in the table.

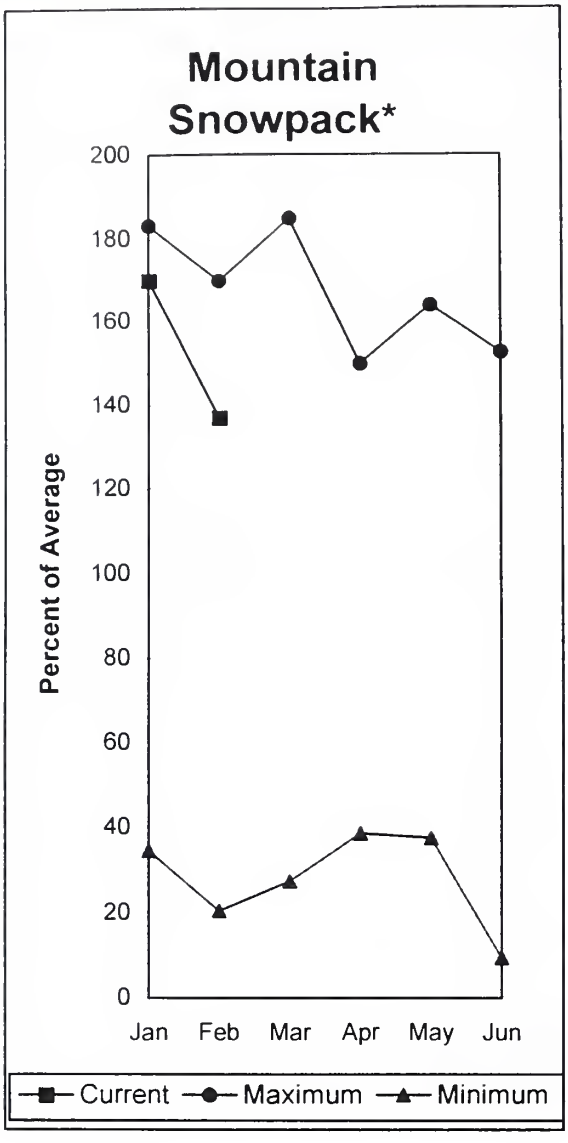
The average is computed for the 1961-1990 base period.

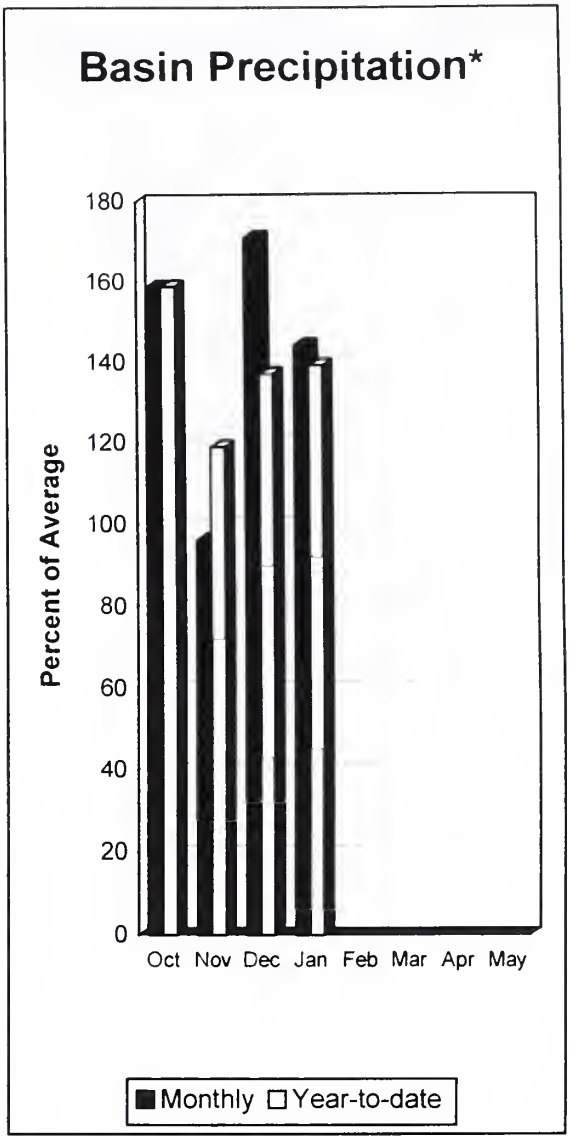
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Stevens Pass SNOTEL
Elevation 4070 ft.



North Puget Sound River Basins





*Based on selected stations

Forecast for the Skagit River streamflow is for 126% of average for the spring and summer period. January streamflow in the Skagit River was 152% of average. Other forecast points included the Baker River at 129% and Thunder Creek at 124%. Basin-wide precipitation for January was 144% of average, bringing water-year-to-date to 139% of average. February 1 snow cover in the Skagit River Basin was 167%, the Baker River Basin was 138% and the Nooksack River Basin was 107% of average. Rainy Pass SNOTEL, at 4,780 feet, had 43.6 inches of water content. Average February 1 water content is 24.5 inches. February 1 Skagit River reservoir storage was 98% average and 73% of capacity.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - February 1, 1997

Forecast Point	Forecast Period	<<Drier Future Conditions Wetter> 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
THUNDER CREEK near Newhalem	APR-JUL	268	285	296	129	307	324	230
	APR-SEP	377	395	407	124	419	437	328
	APR-JUN	162	179	190	128	201	218	149
SKAGIT RIVER at Newhalem (2)	APR-SEP	2248	2542	2742	126	2942	3236	2185
	APR-JUL	1912	2158	2325	127	2492	2738	1830
	APR-JUN	1476	1663	1790	127	1917	2104	1410
BAKER RIVER near Concrete	APR-JUL	949	1023	1074	129	1125	1199	836
	APR-SEP	1215	1306	1368	129	1430	1521	1064
	APR-JUN	681	745	788	129	831	895	611

NORTH PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROSS	1404.1	1011.8	1186.3	1033.9
DIABLO RESERVOIR	90.6	86.3	86.6	84.2
GORGE RESERVOIR	9.8	7.4	7.6	7.9

NORTH PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - February 1, 1997

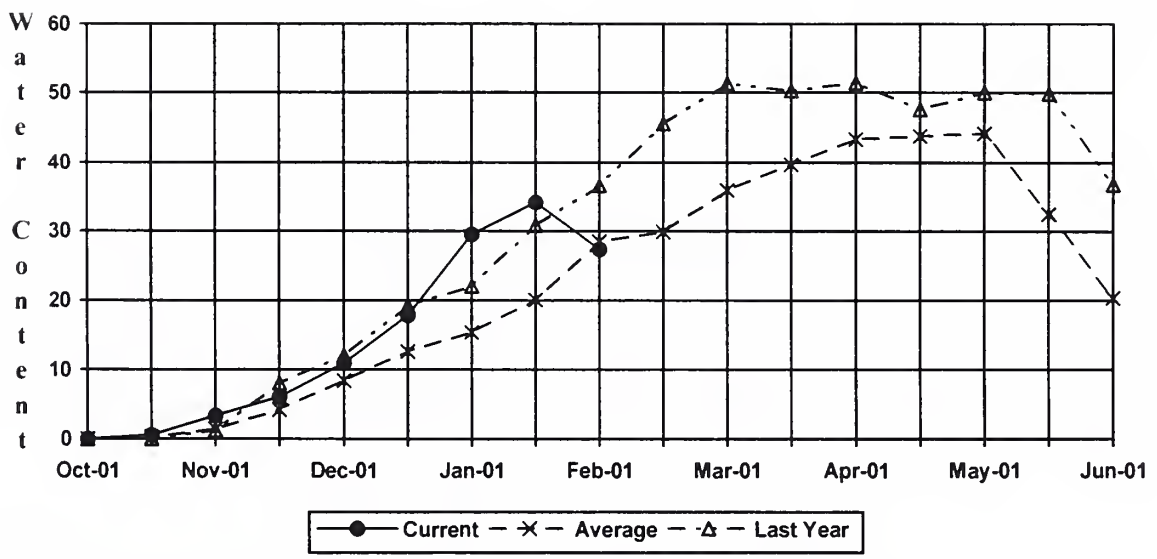
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SKAGIT RIVER	13	177	167
BAKER RIVER	2	204	138
NOOKSACK RIVER	2	612	107

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

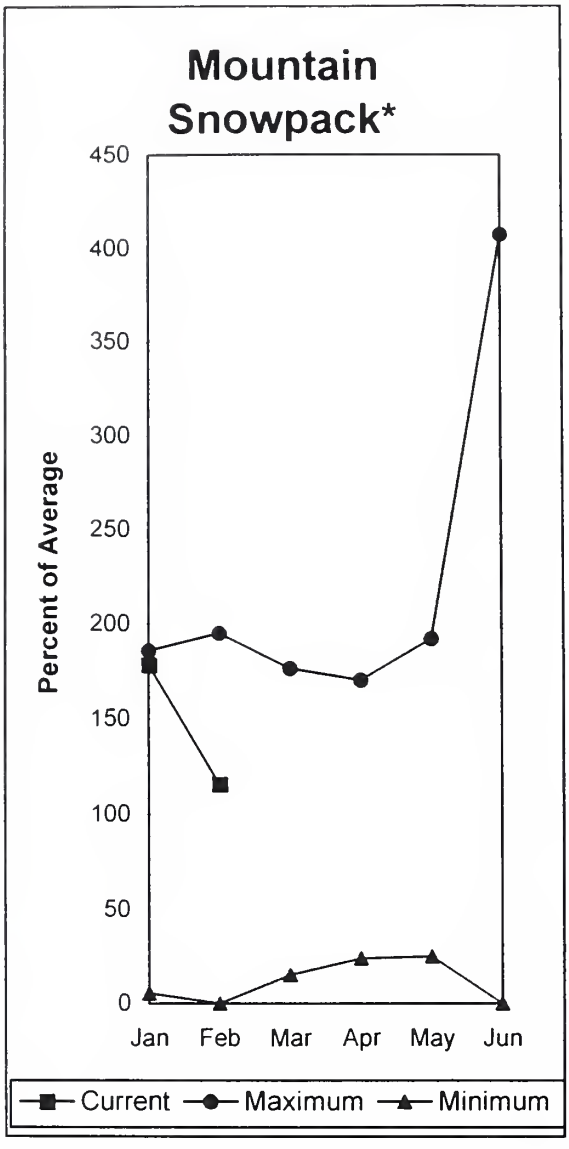
The average is computed for the 1961-1990 base period.

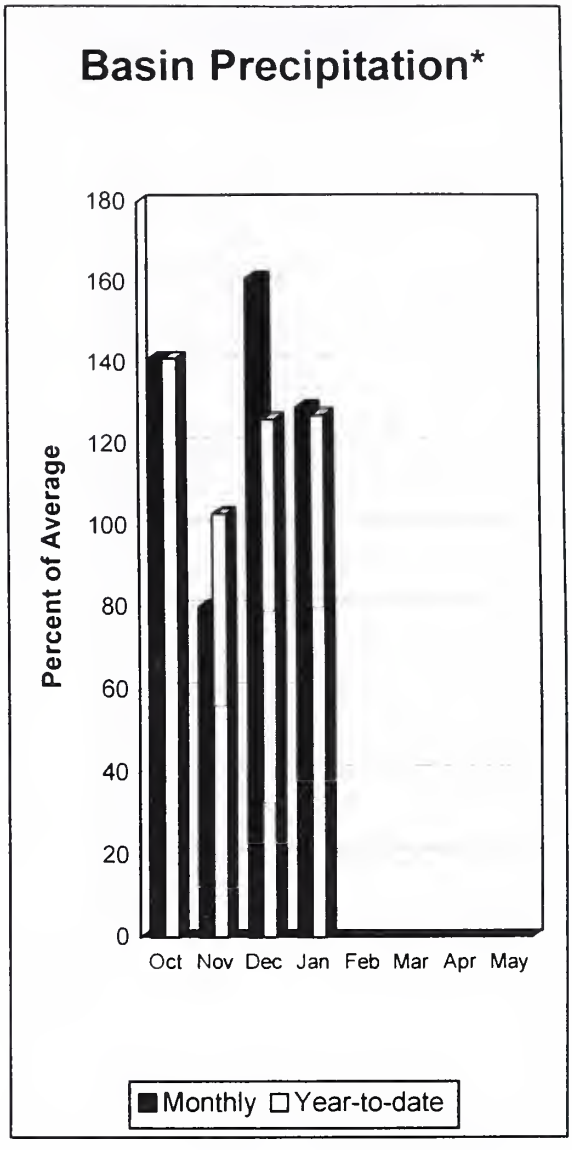
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Rainy Pass SNOTEL
Elevation 4780 ft.



Olympic Peninsula River Basins





*Based on selected stations

February forecasts of runoff for streamflow in the Dungeness River Basin are 122% of average and 125% of average for the Elwha River. The Big Quilcene and Wynoochee rivers can expect near to above average runoff this summer also. January precipitation was 129% of average. Precipitation has accumulated at 127% of average for the water year. January precipitation at Quillayute was 19.4 inches, the thirty year average for February 1 is 14.6 inches. Average February 1 snow cover in the Olympic Basin was at 116% of average. The Mount Crag SNOTEL near Quilcene had 22.1 inches of snow-water-equivalent on February 1. Average for this site is 16.9 inches.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - February 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DUNGENESS near Sequim	APR-SEP	170	180	187	122	194	204	153
	APR-JUL	140	148	153	122	158	166	125
	APR-JUN	101	109	115	122	121	129	94
ELWHA near Port Angeles	APR-SEP	568	608	635	125	662	702	510
	APR-JUL	473	504	535	124	546	577	424

OLYMPIC PENINSULA RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

OLYMPIC PENINSULA RIVER BASINS
*Watershed Snowpack Analysis - February 1, 1997

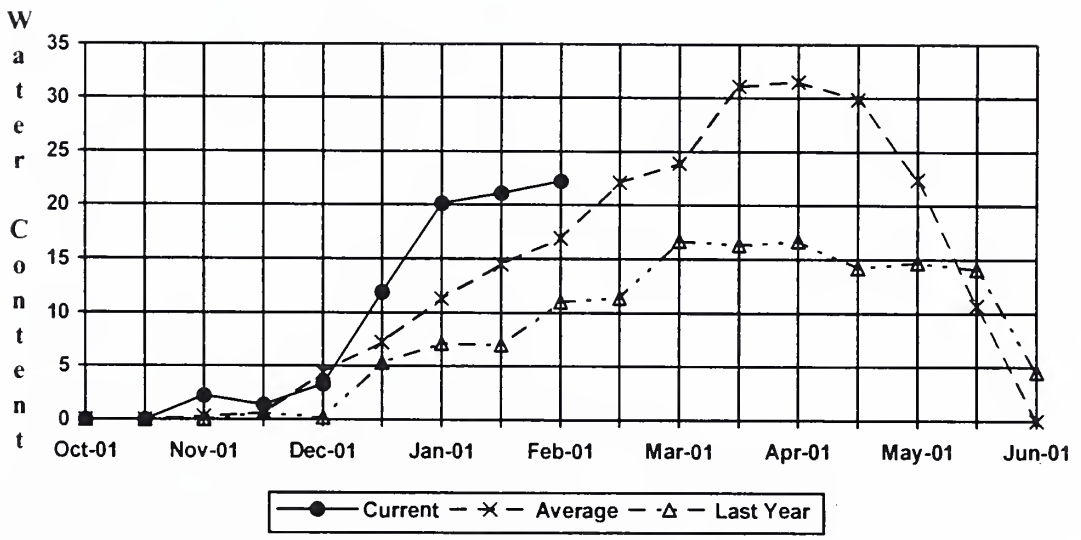
Watersned	Number of Data Sites	This Year as % of Last Yr	Average
ELWHA RIVER	1	493	108
MORSE CREEK	1	292	125
DUNGENESS RIVER	1	307	100
QUILCENE RIVER	1	215	131
WYNOOCHEE RIVER	0	0	0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Mount Crag SNOTEL
Elevation 4050 ft.



Issued by

Paul W. Johnson
Chief
Natural Resources Conservation Service
U.S. Department of Agriculture

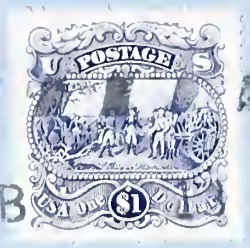
Released by

Lynn A. Brown
State Conservationist
Natural Resources Conservation Service
Spokane, Washington

The Following Organizations Cooperate With the Natural Resources Conservation Service in Snow Survey Work*:

Canada	Ministry of the Environment Investigations Branch, Victoria, British Columbia
State	Washington State Department of Ecology Washington State Department of Natural Resources
Federal	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs
Local	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation
Private	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association

***Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.**



EVERETT, WA 982 FEB 199

Rock Pointe Tower II, Suite 450
W. 316 Boone Avenue
Spokane, WA 99201-2349

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICUL. LIBRARY
CURRENT SERIAL RECORDS
ROOM 002
BELTSVILLE, MD 20705-2351

Washington Basin Outlook Report

Natural Resources Conservation Service
Spokane, WA